# INTERSPECIES SUSTAINABLE DEVELOPMENT:

## intersectional empathetic approaches to food and climate justice

A thesis submitted in partial fulfilment of the requirements for the Degree of Master of Policy and Governance at the University of Canterbury

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*“He aroha whakatō, he aroha puta mai”*

(where kindness is sown, kindness will be received)

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# Abstract

As the global appetite for meat increases, animal agriculture intensifies and brings with it a whole array of problems for both human and nonhuman beings. Along with the question of animal ethics, intensive animal agriculture creates other social and environmental justice implications which infringe on human rights, namely its relationships with both food justice and sustainability; and climate change. Both humans and nonhuman animals are oppressed and exploited under the current food system. Animals are treated as commodities and exposed to systematic violence and domination by humankind. Yet the same power structures also oppress billions of humans across the globe. Billions of people today starve unnecessarily because land which could be used to grow plant food for humans is instead either used to graze animals or grow crops to feed to animals – most of which are consumed by the wealthy, Western world. My aim is to study and critique the so-called solutions to improving the current global food system, whilst exploring the intersections of human and nonhuman animal suffering which exist under it. By focusing on the second UN Sustainable Development Goal – ending world hunger - I theorise that "sustainable development" will fail to solve the problems it seeks to mend, and that we need a more holistic and empathetic approach that considers the lives of both humans and nonhuman animals in conjunction with each other and the environment.

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# Introduction

As I write this introduction the classmates with whom I share this office are engaged in animated discussion about ideas for the "Sustainability Challenge", a university-organised event where teams get together over the weekend to come up with "innovative" solutions to environmental problems faced by Aotearoa/New Zealand. The event is put on with the help of the Ministry for Primary Industries (MPI), and the university's centre for entrepreneurship, and $3000 is offered for the winning idea. The topic is food sustainability. While I ponder over how to concisely describe my research question, ideas about how to improve food sustainability fly around the room. Although some of them are in jest, they include altering the genome sequences in cows so that they emit less methane, crop cycling to improve the soils on dairy farms so that crop yield (then to be used as food for "livestock" animals) can be increased, and (the crowd favourite) fitting cows with hats and jackets which grow grass… No one wants to talk about food distribution or commodity chains, and almost no one wants to even entertain the idea of phasing out animal agriculture for sustainability, because it is too "unrealistic".

This also brings to mind a similar occasion when the lecturer for my core class in policy and governance invited a member of a local rūnanga (governing council) to speak to us about her experiences in iwi governance and her work in furthering the interests of her people. Somehow, the topic of dairying in Canterbury came up, and she expressed to us her personal views about the damage dairy farming does, particularly to rivers which hold cultural importance – mauri – a life force; and her wish that her iwi would invest in more *sustainable farming*, perhaps hemp. At this point, one of my classmates piped up, a young white man, an economics major, whose family owns a few thousand hectares of farmland in the region. He took it upon himself to generously inform the group that there may be some aspects of hemp production that aren't all that "sustainable"; and actually, if you *put the cows in sheds* they are not only "carbon neutral" but can also be kept out of the rivers. Acknowledging that a small but powerful handful of our class is vegan or vegetarian, our lecturer swiftly changed the topic.

I'm by no means trying to simplify or compartmentalise the intersecting issues that surround gender, ethnicity, culture, class, and our relationship with the environment and other animals, but I find these two examples to be an almost perfect microcosm of some of the frustrations I have dealt with whilst I study the question of animal rights and environmentalism in sustainability.

To place myself within the landscape, and within the field, I am a young, cis, pākehā woman who grew up in a small rural town in South Canterbury, Aotearoa. I am a passionate vegan, animal rights advocate, and environmentalist, with huge interest in and concern for injustices of all kinds in the world (although I understand it is not my place to speak to all injustices adequately). I stopped eating other animals when I was fourteen to protest that the pet lamb I had raised and befriended was to be slaughtered and turned into Christmas lunch. To me, veg*anism[1] has always been a political action, and deeply intertwined with other social and political movements, although I have often found myself the subject of ridicule, dismissed as another white, privileged, hysterical teenage girl following a fad diet.

I completed my undergraduate studies with a major in political science, and I chose to continue in this field for my postgraduate studies, viewing it as a practicable and tangible way for me to bring about meaningful change through research. ("Political science" as opposed to "politics" or "political

[1] Veg*an is the word used when referring to groups which consist of both vegetarians and vegans

studies" often strives to take a more "scientific" approach than the latter two and is more heavily concerned with the analysis of data and statistics.) I chose my research question about how animal rights could fit into the concept of sustainable development, with a focus on one of the United Nations' *Sustainable Development Goals*: goal number two, which aims to abolish world hunger. I set about delving into facts and figures about the current global food system, at the same time frustrated that I had to justify within the field how and why animal consideration fits into political science. I will add here that at the time I purposefully chose a topic with a heavy focus on human suffering, not only because it is something I care very deeply about, but also because I believed my mahi would be "taken more seriously" or legitimised within political science if I downplayed the animal rights part. I acknowledge now that I was caught up in the human/animal dichotomy and a hierarchy of care, both of which, ironically, my thesis seeks to critique and dispel.

Humans, nonhuman animals[2], and the environment are systemically oppressed and exploited under the current global food system. Originally, the purpose of my research was to uncover the facts and figures that support such a claim, as well as all the ways in which their sufferings intersect, in a naïve attempt to 'prove' that adopting a plant-based (or vegan) diet is the number one way to cure starvation, diet-related disease, climate change, and of course exploitation of nonhuman animals. These issues take up a significant portion of my dissertation, in chapters one, two, and three. However, as I became more and more engrossed in my research, I began to see more and more clearly the complexities of the problems about which I was writing. I am not the first and will not be the last to lay out the facts, data, and statistics which clearly indicate the harm caused by a nonhuman animal-based food system. These are generally widely accepted notions, and have been for decades, which tells us that the problem lies not with the collection of academic evidence. The real struggle is against the loud voices who tell us we must put the cows in sheds for the sake of sustainability, and the hierarchies and power structures which enforce this dominant and harmful view, subsequently reinforcing other forms of exploitation and oppression.

The purpose of this thesis, then, is to explore the ways in which the global food system harms nonhuman animals, humans, and the environment alike. It also uncovers how *sustainable development* - the solution offered up as an antidote for most of these problems - not only exacerbates them, but often represents the root causes of the majority of the problems it seeks to fix.

## What is Sustainable Development?

The concept of sustainable development emerged in the late 20th century as a response to emerging awareness of ecological crisis resulting from the dominant development model. Somewhat of a buzzword today, the concept was popularised after the United Nations commissioned a group of 22 people from 'developed' and 'developing'[3] countries to identify long-term environmental hazards and solutions for the global community (Du Pisani 2007). The following report entitled *Our Common Future* is better known as the *Brundtland Commission* of 1987. The 1987 Brundtland Commission

[2] I choose to use the terms 'nonhuman animals' 'nonhuman others/beings' or 'other animals' throughout my thesis to reject the human/animal dichotomy and highlight that humans too, are in fact animals.

[3] I place 'developing'/'developed' in quotation marks because I am at odds with the notion that a nation or society can be defined simply by economic development. Ideas of 'third world vs first world' or 'developing vs developed' are divisive, create a sense of 'winners vs losers', and an idea that there exists a perfect end point – i.e. to become 'developed' (not to mention that many nations in the 'developed' world have high rates of poverty and social inequality).

definition of sustainable development is *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (cited Emas, 2015: 1).

Since its inception, the United Nations has used *sustainable development* as a tool to set goals which encourage peace and prosperity – to "reduce inequalities", "preserve our oceans and forests" all while working to "spur economic growth" (UN 2019a). The first of these sets of goals was agreed upon at the Earth Summit in 1992 held in Rio de Janeiro, Brazil, during which more than 178 countries adopted Agenda 21, a plan to "build a global partnership for sustainable development to improve human lives and protect the environment" (*ibid*). This was followed by the Millennium Summit in 2000 held at the UN headquarters in New York when a similar set of goals were revised and promised. Adopted in 2015 by all UN Member States, the 17 current sustainability goals are part of the "2030 Agenda for Sustainable Development". The goals include ending poverty; improving education, gender equality, and water sanitation; and promoting "sustained, inclusive, and sustainable economic growth" (UN 2019b).

Sustainable development goal number two, the focus of my research, is about global hunger. Its aim is to "end hunger, achieve food security and nutrition" as well as promote "sustainable agriculture" (UN 2019c). It is concerned with rising hunger across the globe, and the fact that an estimated 821 million people, about 1 in 9 people in the world, were undernourished in 2017, a figure which has risen since 2015 (*ibid*). While starvation and poverty exist en masse, the United Nations reports that at the other end of the scale around 6 percent of children under six years old (41 million) are overweight or obese, and at risk of other diet-related disease (UN 2019c). Sustainable development goal 2 identifies and seeks to mend some inequalities in the way food is produced and distributed, noting, for example, that hunger could be reduced by up to 150 million people if women farmers had the same access to resources as their male counterparts.

# Literature Review

## Sustainable development and the global food system:

Critiques of sustainable development rhetoric have been highly significant to my research. As it is one of my core frameworks (as I will discuss later) ecofeminist critiques have been immensely important in this regard. One of the first extensive works on this topic was *Feminist Perspectives on Sustainable Development,* edited by Wendy Harcourt (1994). In it, authors (including Harcourt) argue that sustainable development uses a mathematical/economic structure which is too narrow and ignores the reality of complex gender and other social relations. They also call out the focus on economic growth in development discourse for being a problematic, Western/patriarchal model, resemblant of colonialism. As Harcourt explains (remaining wary of idealising or exoticizing other cultures), many are critical as to how development discourse confidently promotes the Western model of production, where the productivity of the work is perceived as satisfying individual desires rather than fulfilling community needs.

Likewise, in "Stop the rape of the world: an ecofeminist critique of sustainable development" Annie Rochette argues that the main flaws in sustainable development discourse lie in both its androcentric foundations and in its failure to challenge fundamental norms in the dominant development model it replaces, alongside dependence on the global market economy. Sustainable development, Rochette argues, is based on a masculine worldview in which humans are both separate to, and 'transcend' "nature", which has led to the subsequent exploitation of natural resources. Like many others, (Gaard 2015; Harcourt 1994; Kings 2017), she addresses the

disproportionate ways in which women are affected by climate change and natural disasters, and sustainable development's failure to address this in any meaningful way.

In "Ecofeminism and Climate change", Greta Gaard (2015) argues that environmental destruction and first world overconsumption are produced by masculinist ideology and will not be overcome through masculinist techno-science approaches (like sustainable development). She argues that environmental degradation is rooted in military, industrial, and capitalist economics. Similarly, Allison (2017) who writes about climate change response from ethics of care framework, argues that the Western inheritances of moral and ethical reasoning are deeply entangled with the patriarchal and Eurocentric norms which have led to climate change. Since the Enlightenment, dominant threads of Western science and philosophy have understood humans as objective, autonomous rational actors. This has led to valuing of Eurocentric culturally "masculine" traits like independence, autonomy, hierarchy, domination, transcendence and an orientation to short-term results over traits coded as "feminine" such as interdependence, community, sharing, emotion, and care (Allison 2017).

A. E. Kings shares these arguments but also highlights the importance of social characteristics other than gender when considering oppression under environmental crises and how sustainable development as a model should respond (2017). These include caste, class, ethnicity, religion, and sexuality (*ibid*). Kings argues that if sustainable development is to be improved then intersectional approaches are essential, noting that the hardships faced by women on a daily basis are as much to do with factors of class, religion, and ethnicity, as there are to do with gender (2017).

Ecofeminists also address other animals, including the notable absence of nonhumans in sustainable development rhetoric. Ecofeminists such as Gaard (2015) and Kheel (2008) discuss the connections between the exploitation of both the environment and nonhuman animals as exploitable resources under a model of development. In *Where are the Animals in Sustainable Development? Religion and the Case for Ethical Stewardship in Animal Husbandry,* Narayanan (2016) argues that the rights or considerations of "livestock" are largely ignored under sustainable development. Nonhuman animals, she argues, are categorised as 'natural resources' for humans under a capitalist regime. According to Narayanan, sustainable development, while intending to humanize development for minority groups of humans, intensifies the problem of commodifying nonhuman animals, who "fall between the cracks" of not-quite-nature, and not-quite-human (2016: 172). In *Education for Sustainable Development (ESD) as if Environment Really Mattered*, Kopnina (2014) asks why Animal Rights and Deep Ecology aren't considered in sustainable development and considers what sustainable development would gain from an integration of these perspectives. Kopnina argues that with human population growth comes an increase in consumption and "simultaneously growing disregard for non-human species" (2014:38). A major critique of hers is that currently there is no consistent discussion of the billions of farm animals killed for consumption, an aspect of consumption largely absent from the sustainable development discussion (Kopnina 2014). To conclude, she summarises that the main reason animal rights should be central to sustainable development is that it will encourage us to "share this planet to the benefit of the majority of the Earth's citizens" and "go beyond the one-species-only 'pluralism' [to teach] the value of the true planetary democracy" (Kopnina, 2014: 44).

In *A Sustainable Campus: The Sydney Declaration on Interspecies Sustainability,* Probyn -Rapsey et al argue that the term sustainability needs to be mobilised or transformed into one where "food justice refers not only to justice for human consumers and producers of food and the land used by them, but also to justice for the nonhuman animals considered as potential sources of food themselves"(111). They argue that the current trajectory recognises the value of protecting eco

systems “while at the same time failing utterly in the protection of those ecosystems due to the persistent and self-defeating conceptualisation of animals as exploitable resource” (137).

## Animal rights/intersections

While there may be limited literature on animal rights in sustainable development discourse specifically, the existing scholarly work on animal rights discourse is substantial. Scholars have debated the issues of animal rights since philosopher Jeremy Bentham’s 1789 assertion “the question is not, Can they reason? nor, Can they talk? but, Can they suffer?” (in Sunstein, 2004: 12). John Stuart Mill compared animal exploitation to slavery, a theme repeated throughout the field (Harper 2010; Spiegel 1986; Sunstein 2004). Numerous other scholars, including Singer, Francione, Kymlicka & Donaldson, and Wadiwel have covered animal rights definitions, frameworks, and theorised what they could look like in legal and political systems. While I respect and appreciate the work of those in animal rights theory, I don’t intend to expand on the meanings and implications of animal rights, nor do I find some of the dominant discourse of animal rights particularly helpful in terms of abolishing hierarchies and power structures as a more holistic method, for reasons which will be outlined shortly, though in part due to their tendency to ignore intersectional issues.

The term ‘intersectionality’ was first coined by Kimberlé Crenshaw in 1989, as a framework to illustrate the inability of single-issue movements to address the lived experiences of black women caught at the axis - or *intersection* - of both racism and sexism and thus facing multiple oppressions (Kings 2017). It has since been adopted by many fighting multiple-issue oppressions and forms the basis of ecofeminist work. Intersectionality is integral to my thesis which explores how power structures which form the current global food system work together to oppress many groups such as nonhuman animals, marginalised humans, and the environment.

Because my research concerns intersections of oppression and exploitation under the global food system, a good place to start is those who have critically explored animal flesh as an ideology. Adams (1990), Nibert (2002), Stănescu (2016) and DeMello (2012) have all defined “meat[4]” as a symbol of power. Particularly prominent is Adams’ 1990 book *The Sexual Politics of Meat* (and later *The Pornography of Meat,* 2003). In it she positions meat’s strong connection to the patriarchy, proclaiming that “people with power have always eaten meat” (Adams, 1990: 48). “Meat” is linked to sexual violence, classism, racism, colonialism, gender discrimination, and warfare. She asserts that animal slaughter is a symbol of the ideology that “might is right”. She backs up her claims with historical evidence, such as the popular racial belief of 19 century colonialists that so-called “savages” could survive on a meat-free diet because they were lower down the evolutionary chain, making indigenous peoples supposedly easy to conquer and colonise due to the lack of meat protein (particularly beef) in their diets. Stănescu and DeMello make similar arguments regarding the racist history of “meat” and the notion of “effeminate rice eaters” in the non-Western world, where “meat” is used as a symbol of masculinity as well as white dominance (the two reinforcing one another to construct a powerful hegemonic masculinity) (Stănescu 2017). In her book *Animals and Society*, DeMello links the oppression of humans and nonhuman animals (2012). She claims that the rise of animal agriculture brought with it a new concept of humans and animals - a divide between humans and “nature”, with humans rising to laud control over all animals and nature. This shift, she argues, coincided with the rise of human oppression over other humans, with civilisations “marked by extreme forms of inequality” (DeMello 2012: 257).

[44] Following others in the field, I place “meat” in quotation marks to contest its use as an objectifying term, and as a disguise for the flesh of a deceased individual it represents

Nibert (2002), Torres (2007), and Jones (2015) all argue that nonhuman animal suffering and human suffering are linked. In Nibert's 2002 book *Animal Rights, Human Rights: Entanglements of Oppression and Liberation* he calls for more awareness of the interconnectedness of human and nonhuman animal suffering, arguing, "in a myriad of ways the oppression of other animals has been devastating for the cultural, spiritual, and economic well-being of the vast majority of humans. What is more, the oppression of devalued groups of humans has been, and remains, disastrous for other animals" (Nibert, 2002:xiii). Nibert theorises that not only does the exploitation of nonhuman animals, as well as the justification for their mistreatment, closely resemble human oppression, but is "inextricably tied to it" (2002: 3). Like others, he argues that the mistreatment of nonhuman animals has shaped the current social and economic climate in which prejudice, elitism, and institutionalised oppression prevail. Nibert thus maintains that liberation of marginalised groups of humans will not succeed without liberation of nonhuman animals.

Likewise, Jones (2015) argues for the urgent need for animal rights to be included in social justice literature and movements. Framing theoretical foundations of contemporary animal rights discourse within a social justice framework, he argues that the moral status of nonhuman animals has well been established (by animal rights scholars such as Singer and Regan), and that nonhuman animals should therefore be considered legitimate subjects of justice. He describes the systematic oppression and exploitation of animals under human domination and calls for those interested in social justice to expand their considerations to all sentient beings, for the good of the movement. He also briefly mentions the oppression of humans and animals under the same power structures, as does Torres in *Making A Killing: The Political Economy of Animal Rights*. Through an anarchist lens, Torres studies the ways in which both humans and animals are exploited and oppressed in a capitalist society. Domination and hierarchy, he argues, are part of a capitalist society, which allow for humans to exploit and oppress animals. "If we are serious about social and economic justice and reject a world-view where "might makes right", then we must expand our view to everyone – especially the weakest among us" (Torres, 2007: 17). He describes the violent nature of capitalism, and, like many others, of the rise of "man's" dominance over nature, claiming that "as humans we not only oppress other humans, but we also dominate, abuse, and destroy nature, including the animals within it" (70). He argues that the shift in which humans came to dominate and 'manage' "nature"[5] is directly linked with a capitalist worldview which also works to oppress other humans through the naturalising of hierarchy. Referencing Bookchin, he proposes that the domination of human by human stems directly from the domination of nature/animal by humankind. In following chapters, he criticises the animal rights movement's focus on animal suffering which he argues marginalises human suffering and fails to link human and animal oppression. He proposes that the movements should work together to abolish hierarchy. This section has addressed those who focus primarily on the oppression of nonhuman animals, and how this oppression is linked to capitalist organising logics. Oppression as linked to capitalism is also raised by scholars of food justice.

## Food justice

In *A Foodie's Guide to Capitalism: Understanding the Political Economy of What We Eat,* Holt-Giménez argues that the capitalism is the driving force behind the current crises in the global food system. He describes the capitalist history of the food system and uses this framework to explain problems such as why billions of people go hungry today in the face of abundance and waste (Holt-Giménez 2017). Like Lang in *Towards a Sustainable Food Policy* (1999), Holt-Giménez also expresses concern that a handful of big corporations hold the monopoly on most of the food produced. Holt-

[5] I place nature in speech marks as a way to question the culture/nature dichotomy, and the idea that what constitutes "nature" or "natural" is easily defined

Giménez highlights important intersections between injustices within the food system, such as racism and sexism; so although the question of the nonhuman animal is largely non-existent, it has still been an integral work for my dissertation. Likewise, despite the absence of the nonhuman animal in Peter Dauvergne's *Environmentalism of the Rich*, I consider it of key importance to my research. Dauvergne theorises that consumption is the biggest threat to environmentalism, and he is largely critical of large corporations adopting "sustainable" labelling and "green" policies; and of the rich, western environmental movement which simply encourages us to take out the recycling and make "responsible" choices, all within a consumer culture. Reflecting on the political and social justice issues in environmentalism, he argues that "centuries of imperialism and colonialism have left festering societal wounds. In much of the world, extreme exploitation, violence, and inequity continue as states and corporations pursue growth and profits" (Dauvergne, 2016: 1). Dauvergne warns that the globalisation of capitalism puts communities and environments who are less powerful in world politics (such as "indigenous peoples, refugees, and tropical ecosystems") at great risk (*ibid*). From an environmental justice standpoint, Dauvergne describes the injustices and inequalities brought about by a culture of overconsumption, which further marginalise poorer communities who are disproportionately affected by environmental destruction.

## Animal agriculture and the environment

Environmental justice and animal agriculture is another topic covered extensively. For example, in *CAFOs and Environmental Justice: The Case of North Carolina,* Nicole discusses environmental injustice and environmental racism in a case study of pig factory farms in North Carolina, US. She explains the health hazards, both physical and mental, for communities living near CAFOs (concentrated animal feeding operations), the majority of whom are black and low socio-economic. Similarly, Shiva argues that under WTO rules, the poorest in society bear a disproportionate burden of ecological costs from intensive animal agriculture, and unsustainable fishing methods (1999). And animal agriculture is extensively cited as one of the largest proponents of environmental destruction and a leading cause of climate change. Narayanan (2016) Lang (1990), Shiva (1999), Gold (1999), and Dauvergne (2016) all allude to this, though writing on a range of topics, from the question of the animal in sustainable development, to working towards food justice, to consumerism and environmentalism. There are also a vast number of scientific papers which cover this relationship, including UN-funded reports (""Livestock's" Long Shadow 2006; Assessing the Environmental Impacts of Consumption and Production 2010).

Especially relevant to my research is the issue of food justice and sustainability considering the environmental and social risks brought about by the global food system. In *Food, Animals, and the Environment: an ethical approach* Schlottman and Sebo (2019) detail the inefficiencies and atrocities of the current global food system, particularly the consumption of nonhuman animals. They outline the "livestock"[6] industry's contribution to climate change, natural resource depletion, deforestation, ocean destruction, and soil depletion, alongside the unethical treatment of humans and nonhuman animals alike. Others such as Lang (1999), Gold (1999), DeMello (2012), and Narayanan (2016), have also highlighted these problems. Of particular concern regarding the inefficiency of the food system is that at one end of the scale sits overproduction and obesity, while at the other is starvation and poverty, which Gold and Lang both put down to meat consumption in the West. DeMello (2012) also references this in her book, arguing that higher meat consumption exacerbates human hunger. Narayanan (2016) expands on this, arguing that the "production of animals for food leads to steep

[6] I endeavour to avoid the term "livestock" as much as possible in my thesis but will place quotation marks around it when used. As many have pointed out, the term removes all sentience and individuality from the nonhuman animals we farm, reducing them simply to 'stock' who happen to be alive.

calorific loss, and the escalation of hunger and starvation for the poorest humans as agricultural land is turned over for the cultivation of cereals and oil seeds for "livestock" feed" (173, 174). She cites a 2010 UNEP report which calculates that 3.5 billion people could be fed a healthy diet if land used for "livestock" was instead used to grow plant-based food for humans (Narayanan 2016). After highlighting the key pieces of literature which inform my thesis, I now turn to outline the theory underpinning it.

# Theory

## Animal sentience and the limits of animal rights discourse

*"I believe in animal rights because I believe the moral theory in which their rights are affirmed is rationally a more satisfactory theory than those theories in which their rights are denied" (Regan 2003: xiii).*

Animal rights discourse is dominated by politically liberal arguments, founded upon rational principles and abstract rules, championed by scholars such as Peter Singer, Tom Regan, and Gary Francione. While laudable in their efforts to legitimise concern for nonhuman animals, such arguments fall short in supporting my thesis, particularly when considered through the lens of ecofeminism.

My dissertation relies on a compassionate ethics of care approach to nonhuman animal consideration, stemming from an ecofeminist framework. Politically liberal animal rights arguments, such as those adopted by Singer and Regan, are based on "extending" human moral standing to nonhuman others (Curtin 2014). Curtin argues that under these arguments, nonhumans are granted status of "subjects of life" if they are sufficiently human-like in their capacities to be self-conscious, rational beings (2014). Rights are directed at rational persons – moral standing is gained through analogy to humans (ibid). As Maneesha Deckha explains, the moral philosophies of those who dominate the animal rights field use reason-based arguments which rely primarily on correspondence and consistency, that is, to the extent animals are similar to human beings through capacities of suffering, sentience, cognition, and/or awareness (*correspondence*), they ought to be considered within our moral boundaries so we do not appear discriminatory or arbitrary (*consistency*) (2012).

In contrast, a compassionate or empathetic approach stems from a common source, in that humans are far from alone in our ability to experience empathy (Curtin notes that some species possess kinds of empathy far more advanced than humans, such as the shapes flocks of birds in flight take) (2014). It is not about "extending" a so-called human feature onto others but acknowledging shared abilities and interconnectedness between species. Arguments such as Singer's may also fail to take into account the experiences of an individual suffering under mass exploitation, while theories such as Lori Gruen's "entangled empathy" seek to situate the debate away from being simplistically abstract and reason-based, and towards a more empathetic approach (Gruen 2015).

Both Singer and Regan, through the tradition of analytic philosophy, also rely heavily on the division between reason and emotion, and the gendered associations relating to each, according to Adams and Gruen (2014). Marti Kheel argues that although their arguments starkly differ, Regan and Singer share common ground in the devaluing of personal and affective ties (2008). For example, Singer boasts that he did not appeal to the emotions of his readers where claims could not be supported by

reason. The problem with this is that it is often emotional outrage which kindles an interest in animal liberation, as Kheel points out, speaking from personal experience (2008). Their arguments also emphasise the moral importance of autonomy, decision-making, and capacity to think about the future, all of which Kheel defines as masculinist qualities within Western tradition (2008).

In both philosophies Regan and Singer maintain the very dualisms which have worked to create inequalities between humans and other animals (such as reason over emotion, self-conscious awareness over mindless instinct) (Kheel 2008). They also propose that our moral duties towards other animals should stem from recognition of particular qualities other animals share with humans; for Regan that being the capacity for subjective awareness, and for Singer the ability to experience pain (Kheel 2008). Rather than relations of care, "rights" or "interests" are based upon abstract principles (Kheel 2008). Such arguments are founded in liberal, rule-based logic which privileges reason in moral valuation and judgement and devalues emotions and care theory (Dekha 2012). This kind of framing emphasises concern for "ethical obligations" and makes unimportant feminist relational commitments to empathy and care (Adams & Gruen 2014).

The purpose of this dissertation is not to debate animal rights, nor the sentience of nonhuman beings. While I believe this is part of an important debate, it is beyond the scope of my thesis, and has been covered widely by others. My thesis does, however, concern power relations between both humans and nonhuman animals, and between groups of humans. A large part of holding power over others relies upon the creation of myths about the marginalised group. History is filled with examples of humans creating myths about nonhuman animals and other humans in order to justify their exploitation. In the name of scientific research, for example, Descartes proclaimed that animals did not experience pain – that a dog's response to being dissected alive was not one of suffering but a mechanical response; like clockwork (Spiegel 1986). Nonhuman animals have been painted as irrational, soul-less, personality-less, and incapable of feeling complex emotions; therefore, placed in a completely separate category from human beings. Today we are still socialised to believe that fish cannot feel pain, chickens are stupid and cowardly, and that cows are incapable of feeling love towards their calves – all despite plethora of scholarly and scientific evidence suggesting otherwise. Such myths have also existed throughout human history, in cases where one human group has dominated over another. For example, in "The Dreaded Comparison" Spiegel notes that during the time of slavery in America, African people were believed to be irrational, soul-less, and incapable of feeling love (1996). Likewise, and as will be discussed in chapter four of this thesis, during colonialism in the 1800s, white settlers believed that they were more evolutionarily developed than the non-western peoples whose land they invaded, and thus used their "superiority" as a means to justify the horrors inflicted during colonisation (Adams, 1990; Deckha 2012; Spiegel 1996; Stănescu 2016). These myths about both humans and nonhuman animals have worked together to secure power for those at the top. It is beyond the scope of this dissertation to dispel every myth, but it is my hope to encourage the reader to think critically about the ways in which nonhuman animals, and human beings with less power are treated in similar ways, highlighting the workings of power structures. To do this, I use ecofeminism as a major framework, which will now be outlined.

## Ecofeminism

My dissertation provides a critical analysis of sustainable development and its failure to consider nonhuman animal lives that draws largely on ecofeminism.

Feminism is the universal recognition that women are systematically oppressed in relation to men in patriarchal societies (societies in which men have more power than women, as well as more access to resources and opportunities). Patriarchy is defined as "the systematic organisation of male

supremacy" where "men hold power and are dominant figures" (Stacy 1993 in Kemmerer 2011). Patriarchy maintains a social structure which is "male-dominated, male-identified, male-centred, and control-obsessed" (Johnson 1997 in Kemmerer 2011). Common characteristics in patriarchal societies include false dualisms, oppressor and oppressed relationships, and a social structure where certain groups hold power while others are comparatively powerless (Kemmerer 2011).

Ecofeminism expands on this to acknowledge that major systems of oppression are interconnected, and the problematic issue of feminism being championed largely by white, privileged women (Kemmerer 2011; Rochette, 2002). The term *ecofeminism* was coined in 1972 by Françoise d'Eaubonne as part of a call for women to lead the ecological revolution to save the planet (Kemmerer 2011). Ecofeminism is described as not a single philosophy but rather a "loosely knit and practical orientation that examines and critiques the historical, mutually reinforcing devaluation of women and nature" (Kheel 2008: 209).

Ecofeminism promotes a focus on the interconnections between the domination and oppression of women, and the domination and oppression of nature, and a recognition that the two reinforce each other (Kemmerer 2011; Kings 2017). It is critical of single-issue movements, arguing that all struggles are connected under the same power structures. As Kemmerer asserts, environmentalism will not succeed without recognising other forms of oppression; she illustrates this arguing that environmentalists could more effectively fight the dumping of toxic waste on poorer communities, made up predominantly of people of colour, if they addressed racism, for example (2011).

Ecofeminists argue that the perpetrators of violence in the world are largely men; and the victims of this violence are largely women, children, nonhuman animals, and the natural world. While the science of ecology aims to harmonise nature, human and nonhuman; ecofeminism is founded upon ecological, socialist, and feminist theory, incorporating social justice movements such as feminism, peace activism, labour, women's health care, antinuclear, environmental, and animal liberation (Kemmerer 2011; Gaard 2015).

Ecofeminism is also concerned with exploitation under capitalism, and often based on an understanding that women, "nature" and nonhuman others are exploited not only by patriarchy but by capitalists, too (Giacomoni et al 2018). As will be covered in my thesis, many ecofeminists are concerned with patriarchal fixation on production, and the notion that economic development takes precedence over all else, including concern for the environment and marginalised others. Some ecofeminists, such as pattrice jones argue that patriarchal obsession with the control of reproduction (often enforced through heterosexuality) is rooted in capitalism, because capitalism demands continued growth and new markets which depend on the "incessant reproduction" of people to work and consume, thus ensuring the survival of capitalism (2014).

Critiques of false dualisms are prominent in ecofeminist theory. Dualisms categorise in terms of opposites, for example masculine/feminine; white/other races; human/animal; culture/nature; and reason/emotion (Kemmerer 2011). In Western patriarchal societies, most people have been conditioned to view human differences in "simplistic opposition to each other" such as "dominant/subordinate; good/bad; superior/inferior" (Lorde 2000; in Kemmerer 2011). Such dualistic thinking reinforces oppression as well as distorts our relationships with the earth and other animals (Adams & Gruen 2014). As Kemmerer argues, patriarchy's obsession with what are false dualisms has encouraged narrow thinking such as viewing people of colour and white-skinned people as separate or distinct from one another when in reality all humans emerged from common ancestors in Africa (2011). It also means that we view animals as distinctly separate from humans, rather than acknowledging our shared characteristics and experiences as animals, too. Since

contemporary societies tend to be markedly patriarchal, contemporary oppressions are entrenched in patriarchal ideologies and institutions (Kemmerer 2011).

Patriarchal societies "don't merely divide; they conquer" (Kemmerer, 2011: 12). In a dualistic society, things associated with feminine traits are devalued, meaning that emotions, animals, nature, and the body are all devalued in relation to things associated with men, including reason, humans, culture, and the mind (Kemmerer 2011). Carol J. Adams uses the terms "A" and "not A" to describe this feature of masculinity (2003). Features in the "A" category include male, culture, human, "white", mind, civilised, production, capital (again reinforcing the connections between patriarchy and capitalism) (Adams 2003). In the "not A" category she places female, nature, nonhuman animal, non-white people, body, primitive, reproduction, labour (*ibid*). Under this structure, devalued individuals are viewed as a means to an ends by the dominant group (Kemmerer 2011).

Through an ecofeminist lens, this thesis aims to critique the model of sustainable development and its approach to obtaining 'zero hunger', arguing that a system which continues to exploit billions of sentient nonhuman individuals will only continue to exacerbate the suffering of humans. The first section (chapters one to three) provide an overview of the current problems associated with the global food system, including environmental destruction caused by the farming of nonhuman animals for food; the inequalities perpetuated onto human beings; and of course, the suffering of nonhuman animals in the food system. Chapter four details an historical analysis of the evolution of the current global food system, and how the various oppressions faced by different groups intersect. Chapter five discusses the structural nature of hunger, arguing that it is made up of many interlocking oppressions and thus will not be cured with a simple single-focus solution, such as intensifying animal agriculture. Finally, chapter six returns to the question "where is the animal in sustainable development?", maintaining that world hunger has everything to do with our lack of consideration/empathy for nonhuman animals, before exploring some possible alternatives, such as ethics of care frameworks.

# Chapter one: environmental impacts of current food system

The current global food system is, to put it bluntly, inefficient. It is unable to feed a growing population, which is expected to reach 10 billion by 2050 (Ranganathan et al 2016; Sims et al 2016). According to a 2018 report for the UN, food production will need to increase 50% by 2050 to accommodate for such growth (Sims et al 2016). The consumption of animal products (which is also projected to grow along with the middle class in many "developing" nations) is a driving factor in both this inefficiency, and in environmental degradation, water scarcity, species extinction, biodiversity loss, and climate change (Henning 2011; Kingston-Smith et al 2010; Ranganathan et al 2016; Schlottman and Sebo 2019; Sims et al 2016). Many claim that the world food system currently faces what Ranganathan et al term a "great balancing act": to feed a growing population, whilst simultaneously advancing economic development and reducing the destructive nature of agriculture in a changing climate (2016). It is also estimated that to meet the expected calorie demand in 2050, we will need to close a 70 percent "food gap" in the calories of food available between 2006 and 2050 (Ranganathan et al 2016 ). Both of these statements reflect current capitalist notions that a) environmental protection is plausible under the current economic model; b) there is a "need" for continual economic growth, and c) food shortages occur primarily due to lack of food produced. These themes are all foundational to the sustainable development model which will be analysed and critiqued throughout my thesis. Nevertheless, they are important to keep in mind while outlining inefficiencies in the current food system.

## Inefficient consumption patterns

One of the main reasons our current food system is so inefficient is because humans eat at a high trophic level (high up the food chain). Today, humans derive, on average, a third of their daily protein, and 17 percent of calories from animal products (Henning 2011). Instead of using the plant crops we grow to feed the human population (almost 800 million of whom are starving), we feed crops to animals who are turned into food for human consumption (Schlottman and Sebo 2019). One third of the crops grown across the globe are fed to farmed animals, while only 60 percent of crops are fed directly to humans; the remainder going to biofuel, fibre, or seed production (Foley et al 2011). To illustrate, 70-80 percent of US grain is directed to animal feed; 70 percent of China's corn to animal feed; and 85 percent of Brazil's corn animal feed (Schlottman and Sebo 2019). As Henning points out, the grain fed to "livestock" in the US alone could feed the world's 800 million humans suffering from starvation (2011).

Eating at a higher trophic level is not only more resource-intensive, but it leads to more calorific loss (Narayanan 2016). For example, as Schlottman and Sebo note, pigs have a conversion rate of 3:1, which means that for every pound of pig "meat", between 3 and 10 pounds of grains are required

(2019). Animal food systems consume around 67 percent of total crops, in exchange for providing only 13 percent of our net calories (Schlottman and Sebo 2019). Up to 90 percent of calories are lost in the conversion of food that we feed to the animals deemed "food" (*ibid*). Animal-based foods are consistently more resource intensive and have a much larger impact on the environment than plant-based foods; the most resource intensive being beef and other ruminant "meat" (Ranganathan et al 2016). Cattle and other ruminants including sheep require 20 times more land and generate more than 20 times more greenhouse gas emissions compared to pulses, per unit of protein produced (Ranganathan et al 2016). Consuming the "meat" of ruminant animals (cows, sheep, goats) is cited as having environmental impacts 100 times those of plant-based foods (Schlottman and Sebo 2019). Cow "meat"" is specifically mentioned as being one of the least efficient foods to produce, as well as causing the biggest threat to climate change (Ranganathan et al 2016). By one estimate, only one percent of cattle feed is converted to human-edible calories (*ibid*). In addition to this, beef production uses more water, land, and generates more greenhouse gas emissions than any other protein source (*ibid*). A reliance on animal products for food takes an enormous toll on the planet. Some calculations may not even take into account the "processing" of the animals: that is, transport to and from the slaughterhouse, and transport and refrigeration at supermarkets etc (Schlottman and Sebo 2019).

The following sections will take a more detailed look into the inefficiency of the consumption of nonhuman animals as a main protein source within the global food system.

## Resource-intensive

### Land

Of all land used for agriculture, "livestock" farming constitutes 75 percent (Schlottman and Sebo 2019). It consumes over a third of all arable land, and this figure is accelerating as the human population continues to grow. To put this into perspective, urban settlements make up only 4 percent of global arable land (Henning 2011; Kingston-Smith et al 2010; Schlottman 2019). For the land it consumes, animal agriculture produces a disproportionately small amount of food in return. For example, in the US, plant-based agriculture produces 512 percent more food on just 69 percent of the land mass that animal agriculture uses (Sigler et al 2017).

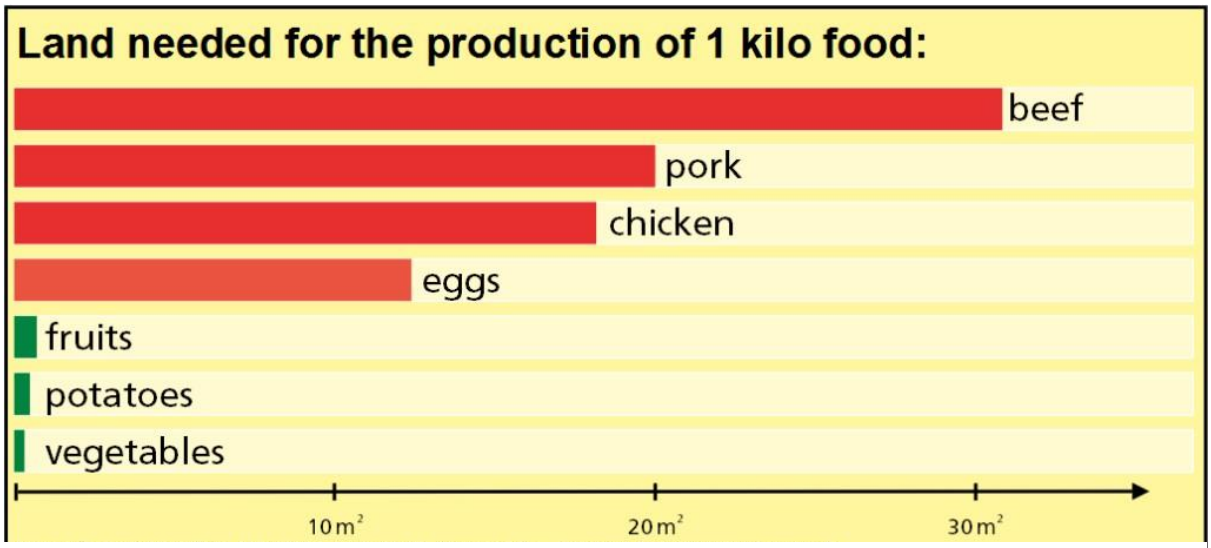


*Figure 1 Source: Okologie & Landbau 2011*

A quarter of global arable land is set aside for grazing, and one third of arable land is reserved for crops fed to nonhuman animals (Schlottman and Sebo 2019). Because of this, croplands and pastures have become one of the largest terrestrial biomes on the planet, rivalling forests (Foley et al 2005). Over the past few centuries expansion of land used for "livestock" has increased several-fold, but currently competes with land needed for housing, growth of crops for human consumption, and growth of bioenergy crops (Kingston-Smith et al 2010). This means that meeting the increased demands for animal products through further expansion of grazing land is not plausible (*ibid*).

## Water

Over 70 percent of freshwater withdrawals are used in agriculture, the majority of this for irrigating grazing lands and crops (which are then disproportionately fed to "livestock") (Schlottman and Sebo 2019; Sims et al 2016; Steinfeld et al 2006). In comparison, "domestic" use of water accounts for just 10% of freshwater use, making the "livestock" sector the single greatest source of freshwater use (Henning 2011). It takes around 13, 600 litres of water to produce a kilogram of cow flesh; 4360 litres for a kilogram of pig flesh, and 3500 litres for a kilogram of chicken flesh (Henning 2011). It takes 1635 litres of water for a kilogram of soybeans, which are commonly fed to "livestock" anyway (*ibid*). It is estimated that 100 times as much water is required to produce one kilogram of animal protein than one kilogram of plant protein (Pimentel and Pimentel 2003). Thus, animal agriculture plays a driving role in global water scarcity. Projections indicate increased stresses on environmental systems as the human population and demand for animal products grows (Ranagnathan 2018).

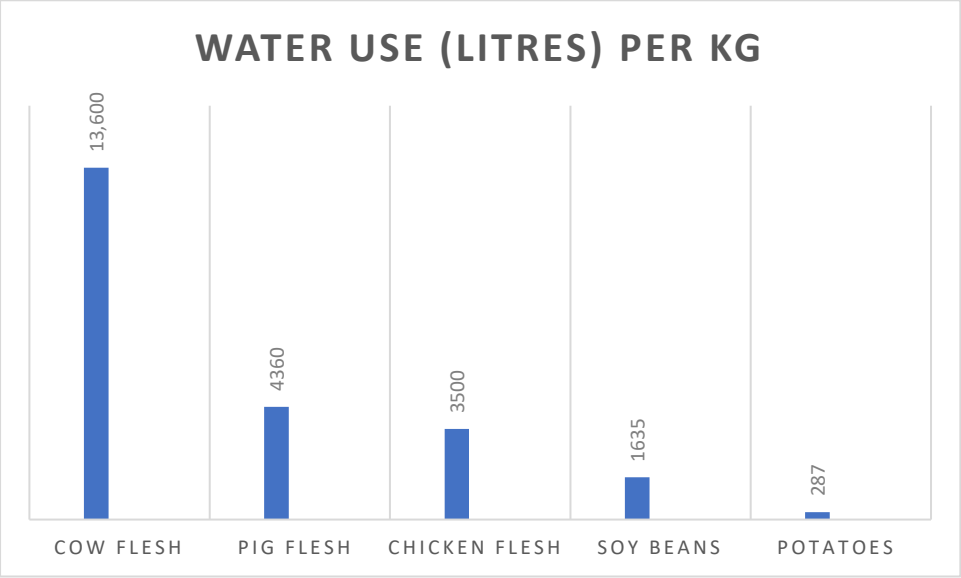


*Figure 2 Water use per kg of "food"( Data from Henning 2011)*

In dairying, it is estimated that it takes roughly a thousand gallons of water for every gallon of cow's milk produced (Gillespie 2018). Farmed animals have a much bigger water footprint because they consume land as well as crops that require regular irrigation, which is a major source of groundwater depletion (Schlottman and Sebo 2019). Production of animal protein uses significantly more water than plant protein (Ranganathan et al 2016). If we continue current trends in water use without

efficiency improvements we will outstrip available supplies by 40 percent by 2030 (Schlottman and Sebo 2019).

After being slaughtered, processing animals requires even more water as they are cleaned, frozen, prepared, and packaged. By one estimate, people in the West consume 30-300 litres of water a day for domestic purposes, while 3000 litres per day are needed to produce their daily food (Schlottman and Sebo 2019).

## Other resources

Along with land and water, animal agriculture uses substantially more resources than other agriculture. For example, Palm Kernel Extract (PKE) is fed to dairy cows in New Zealand to maintain production when pasture is short (DairyNZ 2019; Foote et al 2015). It is a by-product of the palm oil industry, and New Zealand is its largest importer (Foote et al 2015; Tobert 2018). PKE is associated with rainforest destruction and human rights abuses in Brazil and Indonesia; as well as biodiversity loss and greenhouse gas emissions (*ibid*). In a Greenpeace International report which investigated 25 palm product producers which have cleared over 130,000 ha of rainforest since the end of 2015, it was found that New Zealand's Fonterra buys from 18 of them (Greenpeace 2018). In addition to deforestation, the report includes evidence of exploitation and social conflicts, and illegal deforestation and forest fires connected to the clearing of land in all 25 cases (*ibid*).

Fertilisers and agricultural chemicals are disproportionately applied to land used for grazing or growing crops for "livestock". In New Zealand dairying, for example, phosphorous is a key player, the sourcing of which has problematic environmental and human rights implications. The main nitrogen fertilizer used in New Zealand is urea, the use of which has increased 360 percent since 1990. In 2012, 80 percent of urea was imported from Saudi Arabia and Qatar (Foote et al 2015). New Zealand once sourced its phosphate from the Pacific via largely exploitative relationships with Nauru and Bahana where phosphate was shipped to New Zealand and Australia for well below the market rate, funding much of New Zealand's economic success while bleeding dry its Pacific neighbours and displacing whole communities (Mitchell 2018a). Currently, New Zealand sources roughly 70 percent of its phosphate from Western Sahara where many say New Zealand is funding the Moroccan occupation of Saharawi land (*ibid*). Because the phosphate mine sits on the occupied land of the


*Figure 3 Displaced Saharawi living in El-Aaiun camp, one of the five Western Saharan refugee camps near Tindouf, in Algeria. Source: Stuff.co.nz*

indigenous Saharawi people, critics claim that New Zealand is buying stolen goods, while others argue that New Zealand's money directly funds equipment and arms used to oppress the Saharawi people and occupy their homeland (Mitchell 2018b; Mitchell 2018c). The value of phosphate sent to New Zealand between 2016 and 2017 was estimated at NZ$45 million; and opponents believe that if New Zealand were to stop its purchasing of phosphate, it would be too costly for Morocco to run the mine, pushing it closer to a peace process and independence for Saharawi people (*ibid*). New Zealand's largest fertilizer companies, Ballance and Ravensdown, assert that there are no alternatives for phosphate sourcing which do not carry political implications (Mitchell 2018a).

On a global scale, experts say that the world's current rates of phosphorous use are unsustainable and predict we will run out in 50 to 100 years (Cordell et al 2009). "Meat" consumption is responsible for 72 percent of the world's phosphorous use (Metson et al 2012).

## Destruction

*"Few human activities have impacted land use, water cycles, nutrient cycles, human habitation, and nonhuman animal habitat as dramatically as agriculture has" (Schlottman and Sebo 2019:70).*

Animal agriculture, whether industrial or not, is a key driver in environmental change; with its clearing of land, use of pesticides, and prevalence of monocultures it changes whole landscapes to suit animal grazing or raising (Schlottman and Sebo 2019; Sims et al 2016). Globally, it is the leading force of rainforest destruction, which is particularly dangerous since the world relies on rainforests to act as carbon sinks (natural reservoirs which store carbon-containing chemicals and remove carbon dioxide from the atmosphere) (Henning 2011; Sims et al 2016). The clearing itself creates erosion, air pollution, depletion of soil nutrients (Schlottman and Sebo 2019). Cattle grazing, and the growing of animal feeds such as soy are the biggest sources of Amazon destruction, making "meat" consumption the single driving factor in Amazon deforestation (Henning 2011).

### Soil

Deforestation, monocropping, terracing, grazing, and tilling all contribute to soil erosion, and loss of nutrients in soil, of which animal agriculture is the driving force (Schlottman and Sebo 2019). Fertilisers, used disproportionately for grazing or animal feed crops contribute to excessive nitrogen and phosphorus in soil and waterways, killing fish and destroying ecosystems (*ibid*).

The heavy use of fertilizer and other agricultural chemicals risk the potential to grow certain crops, according to Foote et al (2015). Aside from the use of fertilizer, land is also compromised due to overstocking and the use of heavy machinery, both of which lead to soil compaction. Soil compaction occurs when the soil cannot support the weight forced upon it, increasing under wetter conditions (i.e. when the land has been heavily irrigated), or at high stocking rates. Soil compaction leads to increased runoff into waterways; soil erosion; and surface ponding of water on land (Foote et al 2015). Damaged soil restricts root growth and nutrient uptake by plants, which would also affect productivity (*ibid*). According to the FAO, 20 percent of global pastures and rangelands, and 75 percent of those marked as "dry areas" are being degraded, through overgrazing, compaction, and soil erosion (Steinfeld 2006; cited in Henning 2011). The effects of poor soil quality directly affect waterways. Grazing "livestock" such as cattle and sheep cause nitrate leeching, mostly through urination. When nitrate inevitably runs-off into waterways it is toxic to aquatic life, and to human infants, should it enter drinking water supplies (Kingston-Smith et al 2010).

## Extinction/ ecosystem depletion

"Livestock" agriculture has disastrous effects on ecosystems through its use of limited resources such as water and land, and the release of harmful chemicals from fertilisers and pesticides (Henning 2011; Sims et al 2016). Industrial "livestock" farms create too much waste to be disposed of easily, meaning animal waste is a common source of pollution of surrounding water and land; and a serious public health risk to nearby human communities (Henning 2011). The FAO names the "livestock" sector the largest source of water pollution, contributing to eutrophication, ocean 'dead zones' (low-oxygen areas caused by excessive nutrient pollution, largely uninhabitable for most marine life), and degradation of coral reefs (Steinfeld 2006; cited in Henning 2011). Excessive levels of nitrogen and phosphorous (from fertilisers) can cause algae blooms and over-abundance of aquatic weeds, which leads to eutrophication (fluctuating oxygen levels). Eutrophication can be deadly to fish, and results in poor water clarity and unsuitable drinking water (Foote et al 2015). According to the USDA, the manure produced from two hundred cows used for dairy creates as much nitrogen as the sewage from 5 to 10 thousand humans living in the United States (Gillespie 2018). As Gillespie points out, a dairy farm with two hundred cows is relatively small-scale; construction is currently underway in China to build the world's largest dairy farm which will hold roughly a hundred thousand cows, while in New Zealand, the average herd size is 414 cows, but is rapidly growing (the average herd size in the South Island is now 611 cows) (*ibid;* SIDDC 2019). The pollution of waterways is not only dangerous to human health but has deadly effects on ecosystems and the survival of other animals. In New Zealand alone, poor water quality from intensive animal agriculture has resulted in three-quarters of fish, one-third of invertebrates, and one-third of plants threatened with, or at risk of, extinction (Statistics New Zealand 2017).

The present rate of global extinction is 50 to 500 times the "normal" rate, based on fossil record, placing us in what some experts claim to be the sixth great extinction in the history of the planet (Gillespie 2018; Henning 2011). "Meat" consumption is a driving cause of this, being a major cause of deforestation, land degradation, pollution, introductions of foreign species, and climate change (Steinfeld et al 2006; cited in Henning 2011). Animal agriculture is now considered the single driving force in biodiversity loss and species extinction (Henning 2011; Gillespie 2018; Schlottman and Sebo 2019).

## Fishless Oceans

Whether farmed or not, the majority of aquatic life consumed by humans is at a high trophic level, meaning it must consume other plant or animal life to survive. Farmed fish are either fed vast amounts of soy and corn, taking up land and resources which could go into directly feeding humans; or they are fed fishmeal which constitutes wild aquatic life (Schlottman and Sebo 2019). A recent study revealed that it takes between 144 and 293 wild sea animals to feed the aqua-cultured fish and shrimp consumed by the average American annually (Senthu 2015). Farmed fishes, along with pigs and chickens, consume the equivalent amount of wild seafood as all the industrialised countries combined (Schlottman and Sebo 2019). This is drastically altering the habitats and food sources for marine life and is one of the reasons scientists predict we may see fishless oceans by the year 2048 (Worm et al 2006).

Fish is sometimes regarded as a sustainable or perhaps less harmful choice; hence why many "vegetarians" may still choose to consume fish products, while avoiding other "meat". Our consumption of marine life has a colossal impact on the oceans. Industrial fishing uses four times the area of land used for agriculture uses, covering over 50% of oceans. We are removing aquatic life

from the ocean on an unconceivable scale – 109 million metric tonnes per year (Pauly and Zellor 2016). It is unknown the actual number of animals we pull from the ocean, since weight is the only measure recorded, a practice which, as Schlottman and Sebo point out, reveals how language inhibits seeing nonhuman animals as individuals (2019). Of the probable trillion animals pulled from the ocean, not all are even consumed. A large proportion of marine life in industrial fishing is deemed inedible and termed "bycatch". Bycatch can range from undesirable fishes to sharks, sea turtles, or marine mammals such as dolphins. The average amount of bycatch is 10 percent, but in some cases, like shrimp fishing, it is 97 percent. (Schlottman and Sebo 2019). This means that every pound of shrimp consumed carries with it 32 pounds of other aquatic life (*ibid*). Aquaculture (farming fish) is also sometimes seen as a "sustainable" solution to wild fishing, but deforestation for aquaculture (mangroves for shrimp fishing) has climate impacts on par with car travel (Schlottman and Sebo 2019). Fish farms also pollute the oceans with antibiotics, pathogens, herbicides, parasites, fish waste and cause major biodiversity loss (*ibid*).

# Climate change

## Emissions from animal agriculture

Animal agriculture is responsible for roughly 14.5 percent of all anthropogenic greenhouse gas (GHG emissions) on a 100-year time scale (FAO 2013; Schlottman and Sebo 2019). Agriculture itself accounts for one third of anthropogenic GHG emissions, and cattle farming alone contributes a tenth of it (FAO 2019; Gilbert 2012). The farming of animals accounts for 80% of agriculture-related GHG emissions (Schlottman and Sebo 2019). The three main gases released via the "livestock" sector are carbon dioxide (CO2); methane (CH4); and nitrous oxide (N2O). So far, most of the focus around GHG emissions has centred on reducing carbon dioxide, of which animal agriculture contributes 9 percent (Bristow 2011; Henning 2011; Kingston-Smith et al 2010). In animal agriculture carbon dioxide is emitted through deforestation and land changes, the burning of fossil fuels by farm equipment, and the release of carbon dioxide from the soils when land is cleared (Bristow 2011; FAO 2013; Henning 2011). Along with emissions, clearing of land contributes to climate change because it destroys important carbon sinks, and releases carbon in the process. Schlottman and Sebo cite a recent study which claims that the clearing of mangroves in the amazon for one single meal of beef or shrimp would release the same amount of carbon as driving from NYC to LA in a fuel-efficient car (4490 kms) (2019). As a result of decades of heavy cultivation, overgrazing, and monocropping, many of the world's soils are depleted in carbon (Schlottman and Sebo 2019). Estimates conclude that climate change will significantly increase carbon release from soils, making up 12 to 17 percent of anthropogenic emissions (*ibid*).

"Livestock" contributes 37 percent of anthropocentric methane emissions, mainly through ruminant digestion, and waste (Bristow 2011; Kingston-Smith et al 2010). Farmed animals release 85 – 130 megatons of methane per year (Schlottman et all 2019). Industrialised conditions increase methane emissions as the anaerobic environment created by waste lagoons and piles creates condition necessary for methane production (Bristow 2011; Schlottman and Sebo 2019).

Methane is termed a "short lived gas" and is typically seen as less of a threat in comparison to carbon dioxide because it stays in the atmosphere for a shorter period. However, methane plays a disproportionate role in global warming, accounting for 21 percent of all anthropogenic warming (Henning 2011). Unlike carbon dioxide, which is gradually absorbed into land or ocean, methane is chemically broken down in the atmosphere, lasting roughly twelve years on average (Henning 2011).

Despite its relatively short lifecycle, methane is far more effective at trapping heat than carbon dioxide, trapping 23 times as much heat (Henning 2011). If this is considered, "livestock" farming's footprint is much larger than what is typically stated. For example, Henning cites a study in which "livestock" emissions from methane are translated into carbon dioxide equivalents. It states, "to produce 1 kg of beef in a US feedlot requires the equivalent of 14.8 kg of CO2 . As a comparison, 1 gallon of gasoline emits approximately 2.4 kg of CO2. Producing 1 kg of beef thus has a similar impact on the environment as 6.2 gallons of gasoline, or driving 160 miles in the average American mid-size car" (Fiala 2008, 413; cited in Henning 2011).

The animal agriculture sector accounts for 65 percent of nitrous oxide emissions which is created through synthetic and manure fertilisers (Bristow 2011; Kingston-Smith et al 2010; Schlottman and Sebo 2019). As well as trapping heat in the atmosphere 296 times as effectively as carbon dioxide, it is responsible for depletion of the ozone layer, and pollution of waterways and groundwater (Kingston-Smith et al 2010; Schlottman and Sebo 2019). Unlike methane or carbon dioxide, nitrous oxide does not have a natural sink, meaning it cannot be reabsorbed into the earth (Schlottman and Sebo 2019). Nitrogen pollution is also a major human health concern (*ibid*).

Methane and nitrous oxide trap proportionately more heat over a 20-year time scale than carbon dioxide and are therefore considered by many to be far more aggressive (Schlottman and Sebo 2019). Because of this, the "livestock" sector's contribution to climate change increases substantially on a 20-year time scale (*ibid*). Carbon dioxide levels in the atmosphere have increased a third over preindustrial levels; whereas methane has more than doubled in the last two decades (Henning 2011). Because most policymakers focus on carbon dioxide's threat over 100 years, methane and nitrous oxide's potential is often ignored, as, when methane and nitrous oxide's global warming potential is stretched over 100 years it appears diminished, relative to carbon dioxide (Vaidyanathan 2015). Some scientists also predict that short lived pollutants like methane help to exacerbate the global warming process (*ibid*).

As Henning points out, although responses to climate change have typically involved driving fuel efficient cars or turning lights off, the fact is the food we eat contributes substantially more to climate change than the energy we use or cars we drive (2011). Along with an "unstated taboo" against criticising the ethics of one's dietary choices, Henning proposes that the "livestock" sector may be ignored in discussions about climate change because it is responsible for a relatively small portion of carbon dioxide emissions (9 percent) (2011).

## The Urgent Need for Change

The most recent IPCC report warns that we may have as few as 11 years to act on climate change, and to reach a target of reducing warming to just 1.5 degrees we must cut current global emissions by 45 percent (IPCC 2018). Working to keep emissions down will save lives, food security, water supply, ecosystems and human security (climate-related migration/wars); all of which are expected to worsen if warming increases by a further 0.5 degrees (IPCC 2018). To increase our chances of meeting GHG targets, humans' consumption of animals needs urgent addressing. According to Schlottman and Sebo, dietary GHG emissions in self-selected "meat" eaters are twice as high as those in vegans (2019).

Ranganathan et al predict that to fill the afore mentioned food gap, the annual average increase in crop yields between 2006 and 2050 would need to increase by one third more than the previous 44-year period (which included the Green Revolution) (2016). The increases in food production and resulting land-use changes would significantly decrease the likelihood of meeting global climate

change targets of 1.5 to 2 degrees above preindustrial levels (Ranganathan et al 2016). In 2010, agricultural land-use change accounted for almost a quarter of global GHG emissions (Ranganathan et al 2016). Some experts predict that by 2050 this could consume 70 percent of the total allowable global emissions "budget" in place for limiting global warming to 2 degrees (*ibid*).

Henning proposes that even if the nine or ten billion humans of 2050 were fed on soy beans instead of "meat", which would still have a significant impact on the environment, it would represent a 98 percent reduction in GHG emissions; a 94 percent reduction in biomass appropriation; and a 32 percent reduction in reactive nitrogen mobilisation (2011). In theory, the human population could meet its nutritional needs from plant sources and contribute only 1.1 percent of sustainable GHG emissions; 1.1 percent sustainable biomass appropriation; and 69 percent sustainable nitrogen mobilisation (*ibid*).

## Conclusion

The use of nonhuman animals for "food" has devasting effects on our environment. "Livestock" agriculture is the leading cause of water scarcity, biodiversity loss, soil degradation, deforestation, mass extinction, ocean dead zones, and climate change. It also uses disproportionate amounts of finite resources including land, water, and fertilisers. Given that the Bruntdland 1987 concept of "sustainable development" (which forms the basis of the UN's *sustainable development goals* including current goal number two: ending world hunger) is about meeting the needs of the present, without compromising the needs of the future, then using nonhuman animals as a food source cannot be considered sustainable, by any definition.

"Livestock" farming is not only devasting for the environment, but it has countless victims across species lines, including human beings. The next chapter will focus on the suffering of the nonhuman beings in the current global food system.

# Chapter two: the nonhuman victims

Globally, 70 billion terrestrial nonhuman animals are slaughtered every year for food (Schlottman and Sebo 2019). This includes 1.5 billion cows, 50 billion chickens, hundreds of millions of pigs, and hundreds of millions of sheep (*ibid*). The number of aquatic lives we pull from the oceans is unknown, although estimated to be in the trillions (Schlottman and Sebo 2019). Most of these animals are subject to horrific conditions, and all of them shortened lives. Billions more wild animals are killed through the clearing of land for grazing, or destruction of marine habitats through methods such as trawling; and, as we saw earlier, animal agriculture is a driving force in mass extinction (*ibid*). By one estimate, a vegetarian saves somewhere between 371 and 582 animals per year: along with the animals slaughtered for consumption, these include feed fish, pests killed in crop fields, and animals who die before they reach slaughter age (*ibid*). While not included in this study, a person following a vegan diet would save substantially more animals, including chickens and cows used for their reproductive products, along with the male offspring deemed useless in the egg and milk industries.

## Industrialisation of animal agriculture

While nonhuman animals have suffered at the hands of human beings for arguably tens of thousands of years, the scale of exploitation increased exponentially after the Industrial Revolution. The agricultural sector began to industrialise in the early 1900s, following the emergence of industrialisation in western Europe in the late 1800s (Stull & Broadway 2004). Industrial agriculture is characterised by intensification, where producers/farmers attempt to get as much out of their land/"livestock" as possible (i.e. increased use of fertilisers and farm chemicals, use of selectively bred nonhuman animals to grow more "meat" in a shorter period of time); concentration, where larger scale farms are favoured by the market, and where the majority of farms are owned by a handful of corporations; and specialisation, where farms specialise in one type of nonhuman animal, or one "product" (Stull & Broadway 2004).

Eighty percent of growth in the "livestock" sector across the globe today is through industrial "livestock" production, and the majority of nonhuman animals raised today live in factory farmed conditions, sometimes called CAFOs (Concentrated Animal Feeding Operations) (Henning 2011). Industrialised agriculture has advanced along lines of science and technology to increase efficiency and maximise production from animals at the cheapest price possible (Stull & Broadway 2004). Through developments in knowledge of genetics it has also brought about a shift in nonhuman animal breeding (Schlottman & Sebo 2019). Not only can humans create life as we please, but also create animal bodies with traits desirable to us (such as large breast sizes in meat chicks). Other 'innovations' have included the addition of vitamin D to animal food to compensate for sunlight as animals are shifted indoors; antibiotics and vaccines to combat increased likelihoods of disease and infections while living in factory farmed conditions; growth hormones to speed growth; industrialisation of crop agriculture to provide plentiful feed for farmed animals; mechanised milking devices, conveyor belts, sorting machines; and artificial temperature and lighting to increase production (Schlottman & Sebo 2019). The high concentration of waste created by industrial farms contributes to disease in "livestock", and therefore an increased use of antibiotics along with the risk of antibiotic resistant pathogens that follows (Schlottman & Sebo 2019). Finally, the advancement of transport systems means a small collection of slaughterhouses will kill thousands of animals per hour (*ibid*).

The changes brought about by industrialised animal agriculture have meant increased violence, suffering, and stress for the billions of nonhuman animals exploited within the food system, which intersect with various oppressions faced by humans who work in the "livestock" sector, or are harmed in other ways by the implications of raising animals for food (which will be outlined in the next chapter). For the nonhuman individuals involved, this means procedures such as ear notching, tattooing, branding, tail-docking, debeaking, and castration all without anaesthetics; artificial insemination without consent; separation of families (i.e. mothers from their young, standard in the dairy and egg industries); and constraining movement of animals (Marcus 2005; Schlottman & Sebo 2019).

As Singer proclaims, animals today are not "raised", they are "produced" (in Henning 2011). Under industrialised conditions, animals are no longer raised by skilled farmhands, but are managed by low-waged, unskilled workers, in factory-like style, fattened quickly for slaughter on high protein diets of soy or corn (Henning 2011). Nonhuman animals raised for "meat" have come to be regarded as "protein conversion machines" where "low-value protein (e.g. corn or soy) goes in and high-value protein (nonhuman animal flesh) comes out" (Henning 2011: 66). In "livestock" agriculture, and particularly under industrialised settings, nonhuman individuals live shortened lives in which they are deprived of health, freedom of movement, and bodily autonomy. Death before scheduled slaughter occur at the rates as follows: 5% for chickens and cows, 12% turkeys, and 16% for pigs (Schlottman & Sebo 2019). In a non-agricultural setting chickens, cows, and pigs live for roughly 8 years, 20 years, and 15 years respectively (*ibid*). In a "low-density" setting chickens live for a few months (apart from male chicks in the egg industry who are killed shortly after hatching); cows live for 22-30 months; and pigs are given 12 months (Schlottman & Sebo 2019). In a factory farm setting these lifespans reduce to a few weeks for chickens; 12-18 months for cows; and 6 months for pigs (*ibid*).

Some may presume that fish consumption is more ethical than consumption of land animals, or that fish are not victims to the same conditions under capitalist industrialisation. Further, as Schlottman & Sebo argue, many people still refuse to regard aquatic animals as sentient beings, capable of feeling pleasure, pain, desire-satisfaction, and desire-frustration; although recent studies show the contrary (2019). Fish are hooked, suffocated, cut open while alive, penned and confined to disease-ridden conditions in aquafarms. Meanwhile, sharks are subject to having their fins cut off and are thrown back alive; and lobsters boiled alive in restaurants across the globe (Schlottman & Sebo 2019). Where nonhuman animals were already subject to oppressive and restrictive practices throughout the history of animal agriculture, industrialism has exacerbated their suffering.

## Capitalism and exploitation

Industrialisation is the product of a capitalist economy. It follows a logic in which profit is sought through increasing outputs and decreasing inputs, which has meant that farmed animals receive less space, little medical attention, less "care", and the cheapest food while at the same time endure practices or genetic mutilation so that they produce as much as possible (whether that "product" is their flesh, or their bodily secretions). As we will see in following chapters, capitalism and animal agriculture co-evolved together, with nonhuman animals playing a direct role in the development of industrial capitalism (Nibert 2002; Torres 2007). Not only is capitalism rooted in the oppression of other animals, it continues to exacerbate the sufferings of just about all other animals on the planet. It has been well argued that the current capitalist system takes its toll on much of the human population, impoverishing millions and benefitting a few at the top. Unfortunately, many of those

passionate about social justice for humans and abolition of an economic-centric society fail to bring the suffering of the animal into the picture.

For a farmed individual today, her life will likely consist of a few months spent in dark, crowded, and painful conditions. In the "livestock" "meat" industry, value lies in the death of the animal (Wadiwel 2015). Other animals, such as battery hens, dairy cows, or gestation sows are valued only for their reproductive capacities and quickly discarded when these begin to diminish, threatening profitability (Adams 2003; Gaard 2015; jones 2011; Kemmerer 2011; Wadiwel 2015). Regardless of how much value a nonhuman animal may put on her own life, she is only seen to have value in her ability to be "made dead" (Wadiwel 2015). Under capitalism, countless animals are seen to be worth no more than their bodies at the time of their deaths (Wadiwel 2015).

As will be covered in the following chapter, a capitalist food system drives agribusiness to become more and more concentrated, at the expense of smaller businesses, subsistence farmers, and of course, billions of nonhuman animals each year (Holt-Giménez 2017; Nibert 2002). The aim of agribusiness, as is the aim of any other business in a capitalist system, is to treat nonhuman animals as producers and extract as much profit from them with as little input as possible (Torres 2007). Unfortunately, this means that the animals raised for food today suffer under marginal living conditions and procedures which seek to maximise profit. Examples of these are practices such as castration, tail-docking, and beak trimming all done without anaesthetic; the confinement of animals into cages or CAFOs (concentrated animal feeding operations) in order to save space; inadequate food sources (such as the feeding of cows food which contained cattle flesh which ultimately lead to the outbreak of "mad cow disease" in the UK); and the fast-paced processing at slaughterhouses which results in errors making for extremely unpleasant and painful deaths (Eisnitz 2007; Gillespie 2014; Nibert 2002;Torres 2007). Because of the competitive nature of the free market under capitalism, it is argued that is an 'economic necessity' for animal agriculture to operate in this way (Torres 2007). As Barbara Noske, one of the early theorists to explore human/animal relations under a capitalist lens remarks, we have developed science and technology with the specific task of extracting the most output from the animals we farm with the least input; it has literally been designed to exploit (1989).

## Marx and the nonhuman

A popular means of discussing any marginalised group under capitalism is through Marxist readings, something which hasn't gone amiss amongst human/animal scholars. According to Marx, the value derived by commodities is part of a social relationship, one in which value is added to a product through the labour powers of workers (Torres 2007). Understood this way, labour lies at the centre of commodities, and Marx therefore viewed capitalist relationships as inherently exploitative because one class (the proletariat; the working class; or those who have nothing to sell but their labour) are dominated by another class (the bourgeoise, or the owners of the means of production) (Murray 2011; Shukin 2009; Torres 2007). The working class lends their labour to produce the commodity and receive only a fraction in return, and Marx considered this absolute theft (*ibid*). According to Marx, human effort to produce commodities for the benefit of others also came at the expense of actual human life and livelihoods (Torres 2007). Since humans have limited time on this planet, spending our lives producing things for the benefit of others robs many of their "human nature" and ability to make positive, transformative difference to the world through our creativity, according to Marx (Torres 2007). The hijacking of this inherent creativity for mere profit, according to Marx, was a horrible crime committed by the stronger to the weaker (*ibid*).

Marx proposed that two kinds of value exist in the context of commodities; use value and exchange value. Use value is simply the part of the commodity which is useful to us, while exchange value is what it is worth in economic terms. Because all commodities can be compared to one another via monetary terms, their use value loses meaning, and exchange value is glorified above all. Marx argued that under a capitalist system use value fades away and all that matters is exchange value, which reshapes our social relations because human interaction becomes increasingly interaction through "things" (Torres 2007). Elevation of exchange value means that value is seen as part of the commodity itself, and therefore the producer is divorced from the product (*ibid*). This is significant in terms of understanding animal exploitation under capitalism.

While Marx was concerned with equating different kinds of human labour, this notion can certainly be extended to consider the lives of animals who are exploited for the profits of humans. As Torres points out, the lives of most farm animals are likely far worse off than the contemporary working class because they are literal slaves and property to humans, never outside the productive system, and spend their whole (if foreshortened) lives serving the interests of those who wish to profit from them. Interestingly, Holt-Giménez mentions that slavery, although once thought of as a pre-capitalist form of production, is now believed by historians to have played a crucial role in the development of industrial capitalism in the first half of the nineteenth century. Before slavery, capitalist agriculture failed to cope with the ever-growing demand for cotton, because capitalists couldn't force peasants to grow it on an industrial scale. Though many contest the notion of nonhuman animals as slaves, since they live under human enslavement and "labour" with minimal input from their human "masters" required by law, it could be similarly argued that animal slavery plays a crucial role in today's economy.

## Losing "animal-ness"

Slaves or not, there are still striking parallels to be made between industrial workers, and farmed animals through a Marxist lens, and anthropologist Barbara Noske was one of the first scholars to illustrate this in 1989. Like human workers under capitalism, the farmed animal, under industrial capitalism, experiences alienation from the product of her "work". In the human realm, this contributes to a destruction of creativity, what is at the core of what it means to be human, as Marx saw it. In farmed animals, alienation, according to Noske, takes away the "animal-ness" from the nonhuman animal, objectifying them into production machines (1989). The ways in which nonhuman animals are kept, particularly those in factory farms, has everything to do with maximising production. As Noske explains, farmed animals are forced to produce in confinement with artificial surroundings such as temperature and daylight which manipulate them towards greater productivity (1989). They are denied all natural behaviour which would interfere with productivity; for example, pigs are kept in confinement because too much movement would restrict their weight-gaining rate; or hens, who prefer to lay in self-made nests are denied to opportunity and instead must spend their lives in metal cages, laying where they stand, because nesting materials, as well as the human labour to find and collect the eggs, requires too much input (Noske 1989). As Noske surmises, "the animals' natural capacity for movement, play, preening, social interaction and contact with the natural environment is almost felt to be subversive: much animal behaviour is referred to as 'unbusinesslike'" (1989:15). Like creativity in humans, natural behaviours must be kept under control, or better yet, abolished (*ibid*). Under industrial capitalism, animal activity must be directed towards cheap and rapid production for humans and only that.

Factors which alienate the workers from their products, according to Marx, include the division of labour, as well as specialisation of skills, both of which create the feeling of cogs in a machine. Noske draws yet more parallels to farmed animals, arguing that not only have farm animals too been bred

to specialise in certain products (e.g. “dairy” or “beef” cattle; and “meat”/egg hens), but that genetic engineering takes it a step further (1989). Broiler chicks, for example, have been genetically modified to grow as much “meat” in as little time, that many can no longer stand by the time they reach slaughter at 6 weeks (Potts 2012). That many cannot walk or stand is of little concern to producers as long as it does not interfere with their primary “skill” – to fatten (Noske 1989). Along with many other animals, these birds have been forced to “specialise” in one ‘skill’ and have thus been deskilled in other ways important to them (*ibid*). Where genetic modification cannot assist, science and technology are substituted in. Farmed animals often live in environments which lead to reactions of stress, aggression, and fear. If causing economic losses, these reactions are met with even more technology to “improve” (Noske 1989). For example, pigs’ tails are docked to stop them biting (out of boredom/stress); chickens’ beaks sliced off with a hot blade as, unable to establish a pecking order in such colossal flocks, they risk injuring each other due to severe stress (Mizelle 2011; Nokse 1989; Potts 2012).

Alienation also occurs from the product itself. For farmed animals, the “product” is either their own offspring, or (parts of) their bodies. Mothers in the animal agricultural industry are forced to produce as many offspring as possible, only to have their babies taken from them (such is the case in “dairy”, egg, and most “meat”. e.g. pigs). Because of this both the mothers and their young suffer immense social deprivation (Gillespie 2018; Potts, 2012). In the meat industry, animals have often been bred or genetically modified to produce at rates dictated by industrial capitalism. In the case of broiler chickens, as touched on before, the rates and sizes to which they grow leaves many birds unable to support their own weight, crushing bones and restricting movement, and also putting them at risk of heart attacks because their hearts cannot grow at a rate to keep up with their large body sizes (Marcus 2005; Potts 2012). Thus, as Noske points out, it is often the body itself, or the products of the body (offspring, milk, eggs) that are the cause of misery (1989). To speak in Marxian terms, then, the body is an alien and hostile power confronting the animal (Noske 1989). “The body which makes up an important part of the animal ‘self’ used to be steered largely by the animal itself but has now become like a machine in the hands of management and is actually working against the animal’s own interests” (Noske 1989:18).

Another form of alienation is from fellow animals. Under industrial capitalism, animals have either been removed from their own societies, or experience conditions which grossly distort these societies such as crowding or the absence of a matriarch. As Noske argues, the nonhuman animals we farm are more than biological organisms; every species is highly social and requires levels of communication, play, contact, and social learning (1989). In the absence of their own species, most of these individuals will endeavour to form relationships with humans (which is in fact how humans successfully domesticated them in the first place), but even human-nonhuman animal relationships are sparse in this era of farming where everything is automated and relationships with farmed animals are at best impersonal (Noske 1989).

A final form of alienation identified by Noske is from surrounding nature. The farmed animal’s ecosystem is not merely interfered with; industrial capitalism has gone as far as to remove the animal from the ecosystem completely (Noske 1989). Most farmed animals today live in artificial and unchanging environments which deny any contact with “nature”, stimuli, or opportunities to learn and explore. There is no relief from monotony or boredom, and senses are dulled. This causes some nonhuman animals in industrial agriculture to die of shock when they experience daylight for the first time, or a change of environment (Noske 1989). Alien surfaces on which animals are kept can cause problems with certain joints, muscles and tendons, causing permanent pain or lameness (*ibid*). Their experiences with food also show the extent of alienation. Most of what factory farmed animals

are fed, says Noske, is not suited to the animals' digestive systems, though it does its job by fattening them (1989). Cows, for example, have digestive systems equipped to handle grasses, stalks, and other fibres. In industrial settings they are instead given high energy grain which causes a variety of health problems (Noske 1989). Likewise, "veal" calves are purposefully given no iron and forced to live in a permanent state of anaemia so their flesh remains pale and delicate (Noske 1989; Wadiwel 2015). Nonhuman animals in the industrialised food system are thus alienated from even their means of sustenance.

Through capitalist production, Noske argues that animals have been robbed by humans of their very subsistence cycles (1989). All control over farmed animals' life-supporting activities has been passed from them onto machines and human managers, and we have reached a point where the nonhuman animal has been completely incorporated into human technology (*ibid*). Animal industries monitor and regulate nutrition, movement, sexuality, and reproductive capacity to produce animal products as efficiently as possible, turning life itself, and the creativity and productivity of it, into a biological machine (Wadiwel 2015). While it's fair to say that animals have been exploited under previous or other economic systems, present day capitalism has eliminated anything in the animal which cannot be made productive (Noske 1989). The animal is therefore modified to fit the production system (*ibid*).

## The violence of capitalism, war, and resistance

Nonhuman animals therefore find themselves caught in the violent system of capitalism. In a capitalist system, almost anyone can be killed or exploited for capital gain (Torres 2007). Torres argues that the system not only unleashes its violence on nonhuman animals in slaughterhouses, factory farms, and vivisection labs; it is actually structured in such a way that simply being nonhuman means an existence of inequality and the constant threat of violence and exploitation (Torres 2007). As Torres explains, structural violence exhibits how the economic order can be stacked against certain groups from the beginning, and an idea of a "level playing field" is therefore deeply flawed (2007). Many use this argument to explain why so many humans are impoverished under a capitalist system; however, the concept of structural violence also applies to the lives of billions of nonhuman animals who are exploited by the humans who hold political and economic power (Torres 2007). Because nonhuman animals are commodified and treated as private property, animals will always be in a subordinate position to humans. As Torres describes, "[nonhuman] animals stand on unequal footing in the social order, subject to structural violence as the social order is already stacked against their interests" (2007: 67). Nonhuman animals are "othered" by us, and humans have constructed economic and social institutions of violence which reinforce this (DeMello 2012; Torres 2007). Since a capitalist state actively works to protect the interest of property holders (and nonhuman animals are viewed as property), those with the most economic and political power ensure that very few regulations are put in place to improve the lives of animals used for profit, let alone liberate nonhumans from human use (Torres 2007). Not only does commodification of nonhuman animals cause immense suffering under human domination, but it also makes their suffering invisible. Adams terms this the "absent referent" – the process by which an individual being is separated and made invisible from her body as a consumable product (1990). As Torres argues, western industrialised societies love to consume with very little thought about the consequences of its actions, or what he defines as the "commodity chain"; that is, the course through which a product develops from its inception through to the consumer (2007). Every commodity, Torres argues, has a complex life where issues of politics, power, class, and gender intersect, and nonhuman animal "commodities" are no exception to this (2007).

Humans have come to dominate all other animals, ignoring their interests in favour of economic wealth, though perhaps introducing "welfare" regulations almost as an afterthought. We destroy ecosystems and natural habitats for those very few animals not domesticated, all in pursuit of expansion and wealth. Worse yet, the billions of nonhuman animals we have bred into existence to feed us are objectified to no end. Since the very first organised hunt right through to today, where humans slaughter over 70 billion animals a year for food, the animals we raise for food have for the most part become nothing less than commodities. As Wadiwel describes, the *sovereign power* (the right to give or take life, according to Foucault) that humans hold over other animals has evolved from "brute exercise of domination by sword" (e.g. the hunting of animals) to the management of biology (2015: 27). This form of biopolitics, in which humans have violent control over all bodily functions (including life or death) of other animals, represents what Wadiwel describes as a *war* between human and animal life (2015). Humans regularly control the biological functions of other animals to extract the most profit. One example of this is the breeding of sheep in Aotearoa New Zealand where ewes are forced into early ovulation to bear lambs in August (midwinter) which creates economic competition. According to Armstrong, this causes one tenth of lambs born in New Zealand's most southern districts to die from exposure every year (2016). This is obviously not a major concern to farmers who continue to meddle with life-giving and life-taking, yielding sovereign power and adhering to the capitalist laws of supply and demand.

You might remember at the beginning of this thesis when I recollected how a classmate of mine had proposed that a 'sustainable' solution to dairy farming was to "put the cows in a shed". I'll be returning to this idea throughout this thesis, but right now I'd like to focus on the experiences of an individual cow used for dairy within capitalist agriculture. A "dairy" cow, like all nonhuman animals in agribusiness, is subject to daily violence and exploitation to squeeze as much production from her as possible (Gillespie 2018). The body of a dairy cow is exploited for her reproductive system, and it is for this she is inherently valued; she is "specialised". On dairy farms across the globe, cows used for dairy are forcibly impregnated routinely, which Gillespie and others describe as a form of "sexualised violence" (2014; jones 2011). In the name of maximising production, cows' bodies have not only been bred to produce excessive amounts of milk, but they are denied their familial and social relationships (again, "de-animalised") through the separation of mother and calf, often just days after birth (Torres 2007). When a dairy cow ceases to produce the desired amounts of milk, she is deemed "spent" and sent for slaughter at a fraction of her natural lifespan (Gillespie 2018; Torres 2007). This is just one many examples of the ways in which violence is inflicted upon nonhuman animals under capitalist industrial agriculture.

As outlined earlier, industrial agriculture, under capitalism, works to increase productivity with as little input as possible. With the goal of maximising profit, little consideration, if any, is given to the nonhuman animals exploited. For example, Marcus explains that because hens used in the egg industry have been selectively bred to produce roughly an egg a day (compared to their ancestors the wild jungle fowl who would lay a clutch of eggs a year), hens commonly suffer prolapse – when the uterus is pushed out along with the egg (2005). In the event of prolapse, a hen will die if she does not receive veterinary care, but it is cheaper (or more profitable) for a farmer to purchase healthy new "layer" hens than to provide veterinary care to one hen (Marcus 2005). Little value is placed on the lives of individual nonhuman animals in agribusiness once their capacities to create profit decline.

Once nonhuman animals in agriculture are deemed ready for slaughter, they are faced with yet more violence. What would already be terror-inducing is exacerbated for nonhuman animals through capitalist requirements for speed and efficiency in industrial slaughterhouses (Nibert 2002;

Schottman and Sebo 2019). Because 'time is money', slaughterhouses operate at such speeds that errors such a unsuccessful stunning occur at high rates, resulting in victims being bled, skinned, or boiled alive (Eitsnitz 2007; Marcus 2005; Nibert 2002; Stull & Broadway 2004; Schlottman and Sebo 2019).Worse yet, it is common practice to set the voltage of stunning guns at the lowest setting so the "meat" does not bruise (bruised "meat" is not as sellable) (Marcus 2005; Eitsnitz 2007). This means that being "economically viable" outweighs the suffering of nonhuman animals who are conscious as they have their throats slit, are scalded, or cut apart; as well as the dangers these impose on the human workers in slaughterhouses (*ibid*).

Capitalism, as Wadiwel argues, always works to capture productivity through discipline and subordination. While earlier I discussed how capitalist models of agriculture deny farmed animals their "animal-ness", they also combat any resistance the animal puts up to extreme forms of domination to which the nonhuman animals are subject throughout their lives, and especially during their last hours, in the slaughterhouse. Any forms of resistance obstruct profit, and therefore industrial capitalism has responded to resistance with technologies to help combat this. Wadiwel gives the example of Temple Grandin's famous curved corridor leading up to slaughter for mammals such as cows and sheep. The architecture ensures the individuals cannot see around the corner so are less likely to back up or come to a stand-still (Wadiwel 2015). This not only streamlines the process for humans (since time is money), but deters resistance on the animals' part, also leading to the false illusion that animals are helping themselves to die by willingly walking to their deaths (Wadiwel 2015). When the victims' resistance threatens to slow the process of killing, just like other violent technologies and genetic modifications which increase productivity whilst making the nonhuman animal's life unbearable; the architecture in the slaughterhouse, the final chapter in a farmed animal's life, aides in increasing profit.

Wadiwel describes the violence and hostility we impose on animals on unfathomable scales as nothing short of warlike (2015). Wadiwel argues that since humans have established sovereign rule over other animals, we feel it our right to eat, hunt, torture, and kill as we please (2015). While the whole life of an animal (like the dairy cow described before) may be filled will violence and oppressive conditions, industrialised slaughter illustrates our violent relationship with animals through not only the speed and efficiency of it all, dull, "terrifyingly everyday" aspect (Wadiwel 2015: 3). Using chickens as an example, Wadiwel describes how the hangers which hold the birds by the feet during the slaughter process are designed specifically to use their own body parts as a means of imprisonment, drawing on Scarry's study of torture in which it is said that the most effective means of torture is to use the bodies of the prisoners against themselves (2015). This extends from Noske's earlier theories about the nonhuman animal's alienation from her own body, the "product", and how it becomes a hostile source of misery. Capitalism has facilitated technologies which efficiently kill, or inflict violence on scales beyond imagination, what Noske coined as the "animal industrial complex" (1989). The animal industrial complex (similar to the military industrial complex) refers to the interconnected institutions, practices, cultural beliefs which uphold the oppression of nonhuman animals through the normalisation of their consumption, in favour of profit maximisation for a small group of elites. This complex, Noske argues, meets the needs people believe they have, whilst suppressing the needs of animals (in factory farms particularly) in the most violent ways possible (1989). I will be returning to the theory of the animal industrial complex in subsequent chapters.

## Conclusion

An unfathomable number of nonhuman beings suffer under the current global food system, and this chapter has outlined how both the extent of the suffering, and the scale of suffering, have been exacerbated under industrial capitalist models. The power and control humans hold over nonhuman animals in the food system has led critical animal scholars to describe our relationship with other animals as war-like, as humans have complete control of life and death (and other biological features), inflict violence so often it becomes 'mundane', and rob the nonhuman animal of her "animal-ness" all in the name of profit maximisation. Barbara Noske argued that the normalisation of violence towards farmed animals today is thanks to the *animal industrial complex.* She also writes that, although the animal industrial complex may primarily serve human needs and interests, the pertinent question is which human needs and interests are promoted (Noske 1989). This is what the next chapter will discuss.

# Chapter three: The human victims

In the last chapter I discussed the extent of nonhuman animal suffering under the current global food system, and how capitalist modes of production exacerbate this suffering. In this chapter I will continue along this theme, focusing on the human population to uncover how the current global food system continues to overproduce while hundreds of millions of people go hungry or suffer from diet-related disease, as well as acknowledging the poor conditions of those who work in the food industry.

## A capitalist food system

While few people within the food justice movement acknowledge it, the current food system is a capitalist system, under which food is commodified. As Holt-Giménez points out, just like any other commodity whether it be a pair of designer sneakers or the latest smartphone, food is produced primarily to be sold in a market where the production and sales of food is responsive to demand, rather than need (2017). With enough money, one could buy however much food she wanted; while those who need food but cannot afford it must either produce it themselves, trade, steal, rely on charity, or simply go hungry (Holt-Giménez 2017). In a capitalist system, food is valued for its potential to make profit, rather than as sustenance for life (*ibid*).

Because food is essential for the survival of human life, it sits at the centre of any society. For this reason, the survival of an economic system, namely capitalism, is also heavily dependent on food (Holt-Giménez). While food is clearly a special and unique commodity for these reasons, under capitalism it is just another product from which to extract profit, argues Holt-Giménez (2017). It also permeates the economic system because food is essential to human labour, and labour makes up the value of all commodities (*ibid*). Industrialisation of agriculture under capitalism has been particularly effective in stimulating further industrial growth, by producing cheap food through mass production, thereby lowering workers' food costs (Holt-Giménez 2017). Since cheaper food also allows workers to increase consumption in all forms, food really can be seen at the heart of capitalist expansion (*ibid*).

## Expansion and concentration

A capitalist food system relies on market expansion and increased access to resources, and this is a priority not just for individual business owners, but for the system as a whole (Holt-Giménez 2017). This explains why land, labour, and other resources have often been forcibly and violently colonized by capital through dispossession or war (more on this later). Such priorities of expansion are typically framed as "social necessities", giving rise to the view that "economic well-being is best measured by our economic growth rate, irrespective of how such growth destroys the environment, lives, or entire cultures and societies" (Holt-Giménez 2017:34). Holt-Giménez explains that while things like natural disasters, private prisons, and the illegal drug trade add to a country's GDP because of the labour involved in rebuilding or incarceration for example; other work (notably traditionally women's work) such as child-rearing, cooking and domestic work, while still essential to capitalism, are not included in GDP (2017). Also not included is food grown for self-consumption or food given away or bartered (*ibid*). These are ideas I will return to in chapter five when I apply an ecofeminist critique to sustainable development's response to world hunger.

Because the current food regime is capitalist by nature, it follows the basic properties which characterise capitalism, including constant growth and expansion, and monopoly of power in the hands of a few firms (Holt-Giménez 2017). The current food system is dominated by a small number of multinational corporations who hold all the power, and whose decisions will affect the lives of hundreds of billions of humans and nonhumans alike (Schlottman & Sebo 2019). Today, approximately 10 multinational corporations own almost every food brand in the world, as illustrated in the infographic below, courtesy of Oxfam 2013. The corporatisation of food means that a small handful of companies hold the monopoly on food and have become powerful enough to dominate governments and enforce rules for labour, trade, property, and technology (Holt-Giménez 2017).

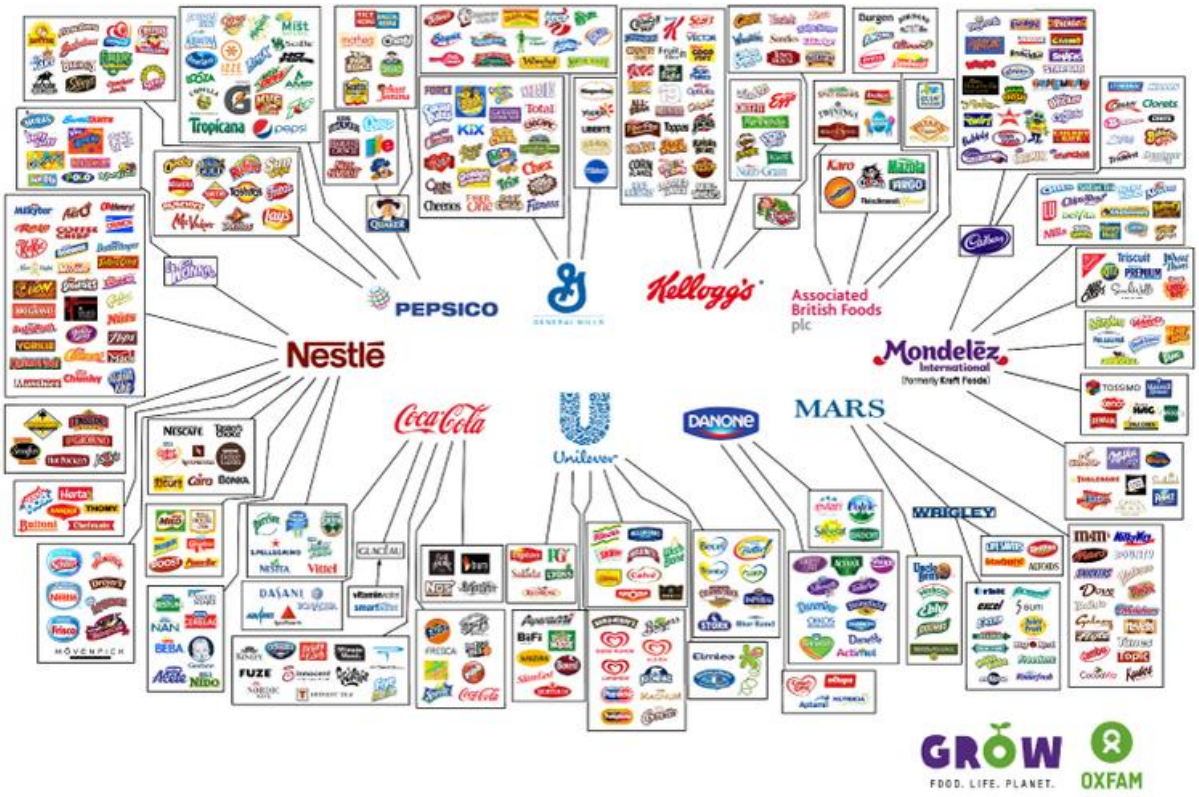


*Figure 4* Oxfam 2013: "Behind the Brands"

According to Holt-Giménez, this political-economic union is reliant upon large public institutions such as the World Bank, the International Monetary Fund (IMF), the World Food Program, the USDA (United States Department of Agriculture), and the World Trade Organisation, along with private funds such as the Bill and Melinda Gates Foundation (2017). It could also be argued that these large corporations are heavily reliant upon , and form the foundations for Noske's Animal Industrial Complex, as the majority of the most powerful corporations in the food industry exploit nonhuman animals for profit, such as Danone, with a net worth of $27.88 billion, half of which comes from dairy production; or Nestlé, worth $78.9 billon, a company which profits primarily from products containing cows' milk, as well as pet food made from the bodies of other animals (TheHumbleRich 2019). Mega corporations in the food industry commonly pass off social and environmental costs to society, and often executives accept that since maximising profits is deemed important above all else, law violations or immoral acts are acceptable (Holt-Giménez 2017; Schlottman & Sebo 2019). Schlottman and Sebo argue that in many cases, the penalties for violating environmental policy equate to a few parking tickets for mega corporations in the food industry (2019). Expansion and

concentration of these large corporations has contributed to both the assaults on the environment, and to the detrimental conditions of nonhuman animals farmed for food which were covered in the last two chapters; but it also contributes to human suffering, such as poor working conditions or decreasing availability of nutritious foods in deprived areas, worsening public health.

## Public health

As Schlottman and Sebo assert, the foods produced today fail to meet nutrition needs, as evidenced by the prevalence of malnutrition, starvation, and other nutrition-related diseases across the globe (2019). While we produce excessive amounts of food, millions of people suffer from calorie and nutrition deficits (Schlottman and Sebo 2019; UN 2019A). On the other end of the spectrum, a vast number of people suffer from obesity and related diseases.

World hunger is certainly on the rise again, largely thanks to climate change-related conditions such as drought, natural disasters, and conflict (UN 2018). Between 2015 and 2016, the proportion of malnourished people rose from 10.6 percent to 11 percent (UN 2018). This means that across the globe, one in nine people (or 815 million) are undernourished, most of whom live in 'developing' countries (UN 2019A). Poor nutrition is the cause of almost half (45 percent) of deaths in children under the age of five, claiming 3.1 million lives each year (UN 2019A). Lack of nutrition also leads to stunted growth in children. Across the globe one quarter of children suffer from stunted growth; although the proportion rises to one in three in developing countries (UN 2019A). Throughout the world, 66 million children will go to school hungry, 23 million of whom live in Africa alone (UN 2019A). In 2017 151 million children under age 5 suffered from stunting (under average height for age), whilst 51 million suffered from wasting (underweight for age group) (UN 2018).

According to Holt-Giménez, however, these figures do not even accurately depict the extent of world hunger because the UN's Food and Agriculture Organisation (FAO) has misrepresented the information through its definition of "hunger" (2017). The FAO's definition of hunger covers people whose calorific intake is inadequate to sustain their minimum needs for a sedentary lifestyle over the course of one year (Holt-Giménez 2017). It is the case, however, that most of the world's hungry people are peasant farmers who engage in demanding physical labour and therefore require much more than the FAO's calorific minimum based on an inactive lifestyle (i*bid*). Further to this, people who go hungry 11 months of the year are also not classified as hungry (Holt-Giménez 2017). If hunger was measured to include the level of calories required for intense activity, the number of hungry people today would be closer to **2.5 billion**, without even including those with serious vitamin deficiencies, or people who go hungry for months at a time, but not necessarily a full year (Holt-Giménez 2017). Holt-Giménez's estimate is twice as high as the UN's FAO's figures (2017). Somewhere between 1.5 and 2.5 billion people may lack access to adequate food; these numbers rising as climate change and conflict presents more hardships (Holt-Giménez 2017).

Since food, like all other commodities in capitalism, generates profit, a lot of effort goes in to create cheap products (like junk and fast food) full of artificial flavours, salt, sugar, and fat, making them highly addictive and thus stimulating more sales (Holt-Giménez 2017). The results of such foods, as well as the promotion of diets high in animal proteins mean that while millions of children across the globe starved; 38 million children in 2017 were recorded as overweight (UN 2018). High consumptions of "meat" and dairy have been consistently linked to obesity (Lanou 2006; Barnard et al 2014); type two diabetes (Barnard et al 2014;Qi et al 2009); breast cancer (Kroenke et al 2013; Thomssen 2010) prostate cancer (Gao et al 2005; Greger 2013) colorectal cancer (Craig 2009) and cardiovascular disease (Craig 2009; Wang et al 2015). In 2016, 39 percent of women and 39 percent of men aged 18 and older were overweight; and 18 percent of children and adolescents aged

between 5 and 19 were overweight or obese (WHO 2018). Each year, 17.9 million people die from cardiovascular disease, an estimated 31 percent of all deaths worldwide (WHO 2017). From 1980 to 2014, the number of people with diabetes rose from 108 million to 422 million (WHO 2018b). It is estimated that 1.6 million deaths were directly caused by diabetes in 2016 (WHO 2018b). Furthermore, colorectal cancer, which has been directly linked to consumption of red and processed meat, as well as "western lifestyles" is the third most common cancer worldwide, with 1.8 million new cases in 2018 alone (World Cancer Research Fund 2019). Animal products such as dairy, which has been heavily marketed as an essential source of calcium, particularly for children developing strong bones and teeth (including by the UN's FAO); is on the contrary detrimental to human health. Populations consuming the highest amounts of dairy products also have the highest rates of osteoporosis (Lanou 2006). Studies also suggest that high milk intake is positively associated with higher risk of hip fractures later in life, particularly amongst women (Feskanich et al 2003; Lanou 2006; Michaelsson et al 2014). This is possibly because diets high in animal proteins are acid-forming, thus promote calcium excretion rather than retention (Craig 2009). On the contrary, a vegetarian, vegan, or plant-based diet has been proven to effectively protect, combat, or in some cases reverse all of these (Barnard et al 2014; Craig 2009; Greger 2013; Wang et al 2015). Perhaps we could "put the cows in a shed" or meddle with genome sequencing so that ruminant mammals produce less methane, but is it really sustainable for the human population to continue to consume products which are killing us?

Finally, industrialised animal agriculture and "meat" processing leads to a greater risk of "meat" contaminated from bacteria that lives naturally in the intestines of the animals, causing risk of campylobacter, salmonella, and e. coli (Eisnitz 2007; Schlottman and Sebo 2019; Stull and Broadway 2004). At the time of her writing, Eisnitz reported that between 65 and 81 million cases of food poisoning occurred every year in the US alone, half a million of which required hospitalisation (2007). Industrial animal agriculture also contributes to the rise of illness such as avian and swine flu, which result from the crowded conditions suffered by animals in CAFOs (Schlottman and Sebo 2019).Furthermore, the heavy use antibiotics and pesticides in the animal agricultural industry creates resistance to them, presenting danger to the human community (Schlottman & Sebo 2019; Stull and Broadway 2004).

## Intersections of suffering

Capitalism has enabled the pursuit of one's economic self-interests to be defined as both natural and morally desirable, as well as a driving force in social affairs (Nibert 2002). All the while, the capitalist system has intensified and exacerbated appalling conditions within the food industry for nonelite, nonhuman animals included. Oppression and exploitation are prominent not only for those working in the industry, but also for marginalised communities who suffer health problems both from the consumption and production of (primarily nonhuman animal) "food".

### Industry workers

Given my thesis topic, a slaughterhouse provides a fitting example not only of oppressive conditions for humans, but of course of barbaric exploitation of animal bodies in the name of profit. Traditionally slaughterhouse workers have been (and are) some of the most vulnerable in society; commonly in countries such as the US they are illegal immigrants who are easy to exploit because they aren't aware of their rights or are too scared to speak out and risk deportation (Eisnitz 2007; Nibert 2002). In a system where profit is valued over all else, assembly line production in a slaughterhouse moves at a rapid, relentless pace, and injury among workers is commonplace (*ibid*).

Slaughterhouse workers are also subject to intensive working conditions and psychological stress of killing animals (Schlottman & Sebo 2019). Those who work in slaughterhouses commonly suffer from substance abuse and are prone to violent thoughts and increased levels of family violence (Eisnitz 2007).

Few modern industries have such classic and clear-cut division between the workers and the owners of the means of production as the food industry does (Holt-Giménez 2017). Because human labour is directly embedded in the value of all commodities (and food is a commodity under a capitalist economic system), human labour is exploited within the global food system (Holt-Giménez 2017). According to Holt-Giménez, farm workers and food workers throughout the world are typically impoverished, the majority paid wages too low to support themselves and their families at an average standard of living (2017). Additionally, agriculture also constitutes 70 percent of employment of children worldwide (Schlottman & Sebo 2019). Typically, agricultural workers are socially, politically, and economically vulnerable, for example in the US, workers in the agricultural sector are largely migrant workers (*ibid*). Workers in the food and agriculture industry endure demanding work, which is taxing on their bodies, for small wages, whilst exposed to dangerous machinery, pesticides, and other agricultural chemicals (*ibid*). Farmers are also more likely die from suicide than the general population (Hutching 2017; Marcus 2005).

## Food justice and racism

In his work, Holt-Giménez encourages understanding of intersectionality between capitalism and other oppressive power structures like sexism and racism (although he fails to bring into consideration the nonhuman). For example, people of colour are twice as likely to suffer from food security and diet-related disease (Holt-Giménez 2017). In the US, for example, African Americans are statistically more likely to suffer from diet-related diseases than white people due to poverty, lack of education, and decreased access to healthful food options (Harper 2010). Echoing the words of Dick Gregory, Harper argues that unhealthy diets (filled with fat, sugar, and animal products – what she terms “flesh foods”) are the root cause of many social justice issues currently fought by Black communities and compares the frequency of deaths from diet-related causes amongst African American communities to genocide (2010).

A combination of classism, racism, and sexism emerged during the formative period of the colonial food regime and are still present today (*ibid*). As will be discussed in the next chapter, the evolution of capitalism was dependent upon slavery, exploitation, land appropriation, and dispossession of products of women, the poor, and people of colour (Holt-Giménez 2017). Harper and Holt-Giménez both argue that these are still foundational to the present-day capitalist food system. Harper is concerned with how harmful and addictive foods prey on vulnerable people, arguing that most of the American population is addicted to sugar, caffeine, high fructose corn syrup, and flesh foods (2010). She proposes that addiction is in fact a form of slavery, noting the irony in how most of these foods have used, or still use, slavery to produce them (*ibid*). In her work which focuses on encouraging black women to consider the connections between oppressions within the food system, Harper declares “…we’re hurting ourselves and exploiting and enslaving others – nonhuman animals and humans- in a way that is similar to colonialism” (2010: 23).

Racism, classism, and sexism influence working conditions; exposure to contaminated food, air, and water; and access to productive land, resources, and nutritious food (Holt-Giménez 2017). Such

inequalities in turn affect resiliency of communities, particularly the ability to recover from natural disasters brought about by climate change (Gaard 2015; Holt-Giménez 2017). According to Holt-Giménez, the disproportionate exposure to the food systems "externalities"; and the inequalities in resource distribution are entrenched in histories of imperialism, colonialism, and patriarchy (2017).

For example, most operator-owner farmers are white, whereas farm and food workers throughout the commodity chain are overwhelmingly not white; the majority of whom are paid low wages, have extremely high levels of food insecurity, and experience nearly twice the levels of wage theft of white workers (Holt-Giménez 2017). There is also an unprecedented wage gap between white food workers and food workers of colour (USD 25 024 vs USD 19 349 a year). White workers also hold nearly 75 percent of managerial positions within the food system (*ibid*). Poorly paid jobs therefore result in racialized poverty: of the 4.7 million people living below the poverty line in the US, less than 10 percent are white, while 27 percent are African Americans, 26 percent are Native Americans, 25.6 percent are Latinos, and 11. 7 percent are Asian Americans (Holt-Giménez 2017). Food insecurity is disproportionately high for people of colour (*ibid*).

Race, poverty, and food insecurity are all interconnected and closely associated with obesity and other diet-related diseases to which diets high in animal products (particularly fatty and processed animal products) are strongly correlated. For example, in the US, nearly half of African Americans and over 40 percent of Latinos are obese (Holt-Giménez 2017). In Aotearoa New Zealand The New Zealand Health Survey conducted in 2017/18 found that 47 percent of Māori adults were obese, along with 65 percent of Pasifika adults (MoH 2019). Likewise, 17 percent of Māori children, and 30 percent of Pasifika children suffered from obesity (*ibid*). It was also found that living in deprived areas is directly correlated with risk of obesity, for example children living in the most deprived areas are 2.1 times more likely to be obese as children living in the least deprived areas (MoH 2019).

Finally, the effects of global warming (largely caused, as was examined in the first chapter, by industrial animal agriculture) will be felt most by the most vulnerable people across the globe (Gaard 2015; Holt-Giménez 2017; Rochette 2002). For people living in climate affected regions, it will become gradually more difficult to grow food for sustenance, thus making them even more reliant on large multinational food corporations. Furthermore, an increase of intensive agriculture practices presents great risks to human health. The public health impacts of agriculture are extensive, and disproportionately affect marginalised groups of people (Schlottman & Sebo 2019). As previously covered, agriculture is the main contaminator and divertor of water, contaminating drinking water and diverting it from public access (*ibid*). Industrialised systems of animal agriculture such as CAFOs produce waste which is far more concentrated than non-industrialised systems, worsening the effects of animal waste-related contaminants (Schlottman and Sebo 2019). Factory farms or CAFOs are also disproportionately located in areas closer to marginalised communities, where pollution has direct health consequences for human populations (Nicole 2013; Schlottman and Sebo 2019). For example, air pollution (nitrous oxide from fertilisers, carbon dioxide from farm machinery) leads to respiratory diseases like asthma (*ibid*). Some studies also show associations between exposure to pesticides and chronic diseases and cancer (Schlottman & Sebo 2019).

## Lamb flaps

A further example of interconnected marginalisation within the current global food system can been found through examination of the trade of "lamb flaps" from New Zealand and Australia to Pacific Island nations. A lamb flap comes from the belly of a sheep and is roughly 50 percent fat (Gewertz and Errington 2010). Deemed too fatty and unappealing for privileged (mostly white) people in New Zealand and Australia, it is sold, and has become an attractive source of protein for poorer people in

Pacific Island nations, who are amongst the most overweight people in the world (*ibid*). As was discussed earlier, fatty red meat contributes to obesity, diabetes, heart disease, and hypertension (Barnard et al 2014; Craig 2009; Gewertz and Errington 2010; Lanou 2006; Wang et al 2015). The consumption of lamb flaps has become such a health risk that Fiji has introduced legislation banning the sales nationwide (Gewertz and Errington 2010). As Gewertz and Errington argue, meat never goes uneaten; and these fatty pieces of sheep carcass are sold simply because the sheep come with them: lamb flaps constitute between 9 and 12 percent of a sheep's body (2010). Producers in New Zealand and Australia argue that they must sell the lamb flaps to somebody – they make up about 4 percent of the value of the carcass by weight (Gewertz and Errington 2010). Lamb flaps are sold to people in Papua New Guinea because no one else, except the very poor will buy them; and because no one will buy them, they become affordable for the very poor (Gewertz and Errington 2010). Gewertz and Errington observe how the trade of lamb flaps provides a compelling symbol of privilege and power relations: "some eating and others eschewing, some becoming rich and others becoming sick" (2010:12). Of course, there are many more intersecting issues within the story of the lamb flap (Gewertz and Errington do not fully consider the life of the sheep from whom the "lamb flaps" are derived) which I will tend to in a later chapter.

## "Feeding the world" under capitalism

Capital is profit in search for profit. Value in the food system is created by bringing labour, resources, technology and markets together to create commodities sold for more than it cost to produce them (Holt-Giménez 2017). Agribusinesses are capitalist enterprises, Holt-Giménez explains, which means they must be constantly growing (2017). For this reason, scholars such as Holt-Giménez are heavily critical of "feed the world" sentiments which are, in actuality, eager agribusinesses looking for an opportunity to expand their businesses (2017). In reality, 70 percent of the food consumed across the globe is produced by small-scale and peasant farmers, rather than industrial agricultural business (Holt-Giménez 2017).

While the current food system is inefficient in a myriad of ways (for example the use of land and resources to grow "livestock" instead of plants) feeding the world - or ending global hunger – does not rely simply on growing enough food. We have already the capabilities and technologies to do so, but the hierarchies and power structures in place which dictate everything, including food, must generate capital for those at the top, are a huge hinderance to this goal. Agriculture under capitalism, as Holt-Giménez explains, tends to overproduce; for the past 50 years the world has grown 1.5 times more than enough food to feed every human on the planet (2017).

Along with the capitalist structure of the food system which leads to inequalities in distribution, corruption, and food waste, is also the problem with the conversion of "first order" foods, like corn or soy, into animal products (Schlottman & Sebo 2019). Studies show that a shift to make just 16 major crops first order food for humans (instead of animal feed) would increase food calories delivered by 50 percent (*ibid*). For example, the US produces massive amounts of corn, but very little of it is fed to humans. As Foley writes "the corn *crop* is highly productive, but the corn *system* is aligned to feed cars and animals instead of feeding people" (in Schlottman & Sebo 2019:91). Similarly, the clear majority of soy beans grown in cleared Amazon rainforest are fed to "livestock" rather than humans (Schlottman & Sebo 2019). Some suggest that up to 82 percent of starving children live in countries where crops are grown to feed animals, and those animals are consumed by people in Western countries (Cowspiracy 2012; Oppenlander 2012). Given that most of the crops grown throughout the world are fed to farmed animals, significant increases in first order food yields would arise if "livestock" production decreased (Schlottman & Sebo 2019). Therefore, a call to cease

the end of farming nonhuman animals for food is as much about human rights as it is about environmentalism and animal ethics.

## Consumerism and environmentalism

The current food system fails to achieve food sustainability goals, largely thanks to its capitalist nature. One of the main reasons is because consumerism is a driving force in environmental degradation and a hinderance to a sustainable food system. Since food is treated as a commodity, the food system drives intensive consumption. Dauvergne argues that environmental degradation is largely a result of western capitalism, and the consumer culture that comes with it (2016). Since overconsumption is the main threat to both the environment, and to most social justice crises, sustainability cannot exist in a culture of consumption (Dauvergne 2016). The current "economy of overconsumption" is producing ecosystem collapses, extreme inequality, exploitation, violence and corruption (Dauvergne 2016).

Dauvergne names the global population's reluctance to tack the problem of consumption in a meaningful way as the reason for the world's 'sustainability crisis' (2016). As Dauvergne describes, much of the "environmental" movement in the west can be defined by businesses labelling themselves as "green" or "eco"; or individuals taking shorter showers and sorting recycling while continuing to buy into consumer culture (2016). In the same regard (although relatively absent from Dauvergne's work), individuals and organisations may still label themselves environmentally friendly whilst buying into meat culture.

A further consequence of consumerism in the food system is food wastage. Capitalism can be characterised by its tendency to overproduce, and the food system is no exception to this. An estimated 30 to 50 percent of food produced across the globe goes to waste (Holt-Giménez 2017). The key to ending food waste would be to end overproduction, rather than attempting "sustainable" solutions such as the conversion of food waste into commodities or donations to food banks which, as Holt-Giménez argues, do nothing to address the cause (2017).

## "Sustainable solutions"

The last three chapters have discussed the main problems with the current global food system: namely its exploitation of the environment, and of countless nonhuman and human animals alike. Very few of these are new ideas, indeed one of the most prominent works on animal agriculture's devastating effects on the environment was written over a decade ago ('"livestock"'s Long Shadow': Steinfeld 2006). Neither is the suffering of humans and nonhuman animals under the current food system new, although the steady progression of industrial capitalism has continued to exacerbate that suffering. But even without taking into account the billions of sentient nonhuman beings within the food system (as few do), it seems starkly obvious that the most "sustainable" solution to the most trying problems we face today would be to cease the use of nonhuman animals for food, from a purely environmental and human rights perspective. Yet still, the loud voices are telling us to simply "put the cows in a shed", for the sake of sustainability, of course. The United Nations' solutions to many of the problems I outlined in the first few chapters echo precisely those of my classmate's.

The United Nations introduced the concept of sustainable development, and the *sustainable development goals* to address some of the most pressing problems faced by the world concerning human rights and environmental protection, acknowledging that the two often go hand in hand. While intentions may have been laudable, sustainable development as a concept has received much criticism, particularly in regard to its obsession with "development" which not only flies in the face of

any efforts to protect the environment (since, as Dauvergne and many others argue, capitalist expansion is the driving cause of environmental degradation); but also exacerbates hardships for those living in 'developing' countries. Sustainable development number two, concerned with ending world hunger, is no exception to this. The UN offers solutions to ending world hunger which include increasing productivity and investing in science and technology, whilst failing to recognise the reasons millions of people today actually go hungry.

## Nonhuman animals and sustainable development goal number two

A report written for the UN by STAP (the Science and Technology Advisory Panel) claimed that to meet the needs of a growing population, food production must increase by 50 percent by the year 2050 (Sims et al 2018). The authors advocated increasing the productivity of both crops and nonhuman animals, for example increased "milk solids per cow" (*ibid*). The report has a heavy emphasis on technical, scientific, policy, and investment solutions, such as how to reduce methane emissions from ruminant "livestock", rather than recommending a shift away from the consumption of nonhuman animals and products (Sims et al 2018). It is also heavily focused on improving "resource efficiency" and recommends "sustainable intensification". For example, one possible solution offered is to convert food waste into "livestock" feed, or to feed insects which in turn could be "processed" and used as a source of protein for humans, fish, or poultry (Sims et al 2018). While the report does mention reducing the demand for "animal protein", this comes near the bottom of the list of 'long term solutions', the rest of which are focused on developing new agricultural technologies and methods to increase 'productivity' whilst decreasing resource use and emission outputs (Sims et al 2018). The report calls for science and innovation within the food system, while the concept of reducing or ceasing the consumption of nonhuman animals and their products is left as almost an afterthought.

In her 1989 work, Noske talks about a generally accepted notion that a decline in animal welfare is necessary to cut costs, increase productivity to progress the human race. This ideology is clearly illustrated through sustainable developments "solutions" to decreasing human hunger rates. The "targets" under the UN Sustainable Development Goal 2 (zero hunger) include doubling the agricultural productivity of small-scale food producers, implementing practices to increase productivity, and investing in infrastructure and research to enhance agricultural productive capacity (UN 2019b). Though not stated explicitly, promoting "sustainable intensification" and increased "productivity" means substantial increase in factory farms/CAFOs, as well as genetic manipulation of nonhuman farmed animals to increase productivity. Many nonhuman animals may also be subject to invasive "research", such as to decrease methane emissions. For example, cows at research facilities are commonly fitted with "stomach ports" - a hole drilled into their sides to provide scientists access to their digestive systems (Haisan et al 2014). The purpose of such research is to find out how different diets of the cattle contribute to methane emissions, as well as how to increase "productivity" through diet. The solutions offered by dominant voices in sustainable development discourse on improving the food system are therefore, to echo Narayanan, "rife with violence" for the nonhuman animals involved (72:2016).

As well as sustainable intensification, "nutritionalism" is yet another example of how dominant solutions to ending world hunger both contribute to the problem (or fail to acknowledge the root causes) and mask the true incentives of power and capital building which lie at their core. Nutritionalism involves fortifying foods with the nutrients that many of the world's poor are missing, ironically mostly because their food crops are exported elsewhere for profit (Holt-Giménez 2017). Holt-Giménez describes it as a "reductionist form of science" which "avoids addressing the causes of

malnutrition" whilst both simplifying and exaggerating the role of nutrients in dietary health (2017: 194). He argues that nutritionalism reduces the problem of world hunger to a problem of insufficient nutrients, rather than asking why nutrients are lacking in the first place (Holt-Giménez 2017). Like intensive agriculture, the ideology of nutritionalism proposes that solutions lie within innovations in science and technology and creates openings in the market place for nutrient-enriched products (Holt-Giménez 2017). Holt-Giménez argues that reducing hunger to a problem of micronutrients serves political and economic functions by not only giving power to corporations who provide the micronutrients, but also through the masking of the ways in which traditional sources of nutrients have been destroyed by the global food system, impoverishing the diets of billions (Holt-Giménez 2017). Some promoters of fortification may even claim that human beings cannot obtain all necessary nutrients through a diverse diet of fresh wholefoods; but rather need personally targeted nutrients administered by the food industry itself (which generates more power and profit for the industry) (Holt-Giménez 2017).

The ideology of "nutritionalism" supposes that people need help from innovations within the food industry to meet their nutrient needs. It consolidates power for those who already hold it; the ability to dictate and produce what is "healthy" or required to live a fulfilling lifestyle. The ideology of nutritionalism also runs along the same lines as the myth of the necessity of high protein intake and animal products in diets, which Kemmerer argues is upheld by institutional power (2011). It is also supported by the *Animal Industrial Complex*, where government policies, institutions, science, and dominant cultural beliefs work together to promote the consumption and necessity of animal products for a healthy lifestyle in the name of profit maximisation (Twine 2013).

As Holt-Giménez argues, the reason people are hungry or malnourished is because they cannot afford to buy food; or because they do not have access to enough land to grow a balanced diet, not because scientists are still figuring out what to feed them (2017). These problems are inherently political, rather than technical and should be treated as such (Holt-Giménez 2017). Techno scientific solutions to ending hunger such as nutritionalism, "sustainable intensification", or promotion of CAFOs will not be successful because they do not encompass a holistic approach nor do they tackle the root causes of food injustice. The next chapter looks at the history of the food system to uncover why these injustices take place today.

# Chapter four: historical understanding

To understand the current food system, it is important to understand its evolution and the power structures which evolved alongside it to make it what it is today. The history of the food system runs along racist, sexist, and classist lines and is filled with violence, conflict, and domination over humans and nonhuman animals alike. Many argue that inequality and oppression we see in the world today developed alongside and is inextricably linked to the evolution of the food system, particularly how humans have come to dominate and exploit other animals. These are intersecting issues that are difficult to separate from one another, however ecofeminism provides the tools with which to dissect them. This chapter will run in chronological order to illustrate the progression of the food system: from the first organised hunt to the industrial capitalised food system we have today, using an ecofeminist analysis.

## The emergence of hunting

As Nibert explains, the hunting of animals by humans for food (and other resources) is a relatively recent development in human history (2002). Scientists predict that the ancestors of humans were largely vegetarian until approximately twenty thousand years ago (*ibid*). Although many of us have since been socialised to believe that humans are evolved predators, and the hunting and killing of other animals is "natural", in fact for most of human existence, food was acquired through the searching and gathering of edible plants; compared to foraging, hunting would have been an inefficient way of obtaining resources (Boyd et al 2002; Nibert 2002). Early humans were experienced with what to look for, where to locate, and how to distribute food; skills that were passed down through generations and created the beginnings of what we now define as culture and social organisation. During this period, as Nibert explains, human species' relationship with other animals was one of peaceful cohabitation, where humans moved closely with other species, sharing water holes and feeding beside them (Nibert 2002). It is likely that our earliest pre-human ancestors ate a very similar diet to that of a chimpanzee – primarily vegetarian, supplemented with insects or the occasional scavenged or small hunted animal (Boyd et al 2002; DeMello 2012). While it is a commonly-held belief that our ancestors were heavy meat eaters (thus naturalising its consumption today), the stone tools left by Homo habilis, who lived roughly 2.5 million years ago, were most likely used for butchering already dead animals rather than hunting them (DeMello 2012).

Organised hunts, however, began to emerge around the time of the Ice Age, when glacier movements expanded grassland and allowed for the migration of large groups of animals (Nibert 2002). Humans began to devote their time to hunting and killing other animals because the massive movement of other animals accommodated successful hunting trips (*ibid*). The rise of hunting affected relationships between humans, particularly between men and women. While men and women had equal standing in foraging societies, the emergence of hunting created a clear division in labour (Boyd et al 2002; DeMello 2012; Nibert 2002). Because the key to successful hunting was an element of surprise (since humans are not physiologically predators), smaller groups were desired; and women with children were left out (Nibert 2002). Men were thus elevated to positions of privilege and prestige, because the meat/bodies of animals became a valued economic resource, and women were devalued (DeMello 2012; Holt-Giménez 2017; Nibert 2002). The decrease in men's participation in foraging and child-rearing activities (due to an increased amount of time spent hunting) meant women had to spend even more time on these tasks (*ibid*).

As I outlined in the introduction, ecofeminist theory identifies false dualisms as characteristic of patriarchal societies, in which perceived opposites are established such as “masculine/feminine”; “white/other races”; “human/animal”; “culture/nature”; and “reason/emotion”; the latter of each category devalued and oppressed. Thus, the separation of men from women, through the division of labour brought about through a change in diet marks the beginnings of patriarchal domination. It also illustrates how domination of women and of nonhuman animals evolved hand in hand: pattrice jones describes sexism and speciesism as “co-dependent siblings of dysfunctional patriarchal families” (2011: 51). Along with this, both a division in labour, and specialised tasks are trademarks of capitalism. Thus, simply through the shift from a vegetarian, foraging society to one which began to focus on hunting, new oppressive power structures arose.

# Beginnings of agriculture

## Oppression of women and domination of nonhuman animals

Following this, yet another shift in power dynamics was brought about through the shift from a hunter-gatherer society to the emergence of agriculture, where animals and plants were domesticated. Some argue that the rise in “livestock” domestication, around 10,000 years ago, coincided with a rise of human oppression over other humans, which included of men over women (DeMello 2012; Holt-Giménez 2017). This may have been because, as Nibert argues, the same systems in place which allowed for animals to be viewed as property enabled women to also be considered property, sold as slaves or sold into marriage (2002). Agriculture also meant women’s roles in productive labour decreased as men had increased control over not only production, but the outputs of production (DeMello 2012). With this “taming of nature” men gained a higher status, and women’s domestic and reproductive roles increased, though their status was inferiorized (*ibid*).

As Marti Kheel points out, in a patriarchal dualistic worldview, women are not just perceived as opposite to men, but everything associated with women is devalued (2008). While women are seen as connected to “nature”, masculine identity is built upon the notion of transcending biology (Kheel 2008). In fact, as Kheel notes, the world “culture” derives from the Latin word “colore” which means “to till” or “to cultivate” (2008). Meanwhile, its opposite in the dualism – Nature – is from the Latin “natura” meaning birth; thus Kheel concludes that both historically and anthropically, women have been associated with that which is born, while men are associated with that which transforms or *develops* nature (2008). Transforming nature is based on controlling it, which is masculinist and problematic as it closes down alternative views of how nature is perceived, and how we could perhaps live with or alongside nature, which may be more helpful or indeed more sustainable.

Early agricultural societies were matrilineal, meaning that children knew who their mother was, but not their father, so wealth was passed down generations through “mother’s rights” (2017). Men’s power in society was acquired through “livestock” ownership, and, as Holt-Gimenez explains, as men gained more and more control of “livestock” and wealth from the surplus which arose, they were faced with a problem wherein they did not know who their children were in order to pass on such surplus (2017). Thus, “mother’s rights” were abolished, along with polygamy; and women’s roles gradually became reduced to providing for men (primarily through sexual acts and offspring) (Holt-Gimenez 2017). In this way Holt-Gimenez theorises that both private property and patriarchy evolved alongside “livestock” agriculture.

The human-animal relationship was also transformed with the rise of “livestock” domestication (Clutton-Brock 1987; DeMello 2012). Human dominance over other animals to exploit their bodies fast became a cultural norm (Nibert 2002). According to DeMello, the rise of animal agriculture

brought with it a new concept of humans and animals – a divide between humans and the rest of "nature" where humans rose to the top and lauded control over all animals and nature (2012). Again, this idea that humankind has transcended the rest of "nature", or indeed biology, is identified by ecofeminists as a problematic aspect of western patriarchal worldview, and prominent in modern Eurocentric philosophy (jones 2011; Kemmerer 2011; Rochette 2002). Many argue that this line of thinking has paved the way for domination and exploitation of women, non-white people, the environment, other animals, and any other group associated with "nature" or the body, as opposed to culture, civilisation, and the mind. Marginalised groups of people including non-white people and women have historically been 'animalised' and deemed closer to nature by those holding power in patriarchal societies, which will be discussed later in this chapter.

The development of agriculture was particularly momentous because it formed the economic grounds for permanent settlements and complex urban centres, as Stull and Broadway argue (2004). However, it also meant direct competition for land and resources. Land was cleared and burned for agricultural purposes, at the cost of countless humans and other animals, leaving many displaced, orphaned, or killed. This also saw the rise of animals deemed pests or "quarry", and most were eradicated because of the threats they posed to human material interests (Nibert 2002). Similarly, agricultural society brought with it mass exploitation of humans (Nibert 2002). The shift in which humans rose to dominate other animals and the natural world, argues DeMello, coincided with the rise of human oppression over other humans, with new civilisations "marked by extreme forms of inequality" (2012: 257).

Although hunting demonstrates power over other animals, true domination and control did not develop until the domestication of "food animals" (DeMello 2012). Domestication paved the way for human dominance and control over other animals, now classified as property to be owned and exchanged (DeMello 2012). DeMello describes how domestication of "livestock" for early agriculture created a clear divide between humans and nonhuman animals, where the latter could easily be *othered* or *essentialised*. *Othering* is a means of marking one group as distinct from another, whether based on species, race, or sex (DeMello 2012). *Essentialising* entails the treatment of all members in a group as if they are the same (*ibid*).

## Social stratification

Nibert argues that agriculture created the class system, as the humans who laboured in agricultural society were devalued, much like women (2002). Because it was virtually impossible to raise enough animals, meat was not plentiful, and food was distributed unevenly, mostly to the elite in society (Nibert 2002). Furthermore, many humans went hungry because land was used to grow animals and their food instead of crops for humans (a phenomenon which sadly still exists) (*ibid*). Crops were grown and saved to feed to animals over the winter, so the elite could still enjoy "meat", while those lower down the hierarchy starved (Nibert 2002). Along with this, the need for warriors to protect the domesticated animals and harvests from other humans arose; and high-ranking warriors eventually began to use their power to manage society. Warfare and violence, as Nibert argues, were a result of large agricultural societies protecting land, and invading others (2002). As agrarian economies exhausted land they looked to expand. Intensive agriculture meant populations grew from small villages into cities; and larger civilisations thus required trade agreements with each other and used warfare to expand territories (DeMello 2012). Thus the rise of animal agriculture saw the beginning of nonworking elites who relied on peasants for food and labour, and used violent warfare to expand their territories (DeMello 2012; Nibert 2002).

While the historical causality between human and animal domination may be a little more complex than this, many scholars argue that the power structures which enabled discrimination over beings based on their species, are closely related to those which have enabled discrimination based on arbitrary differences between groups of humans such as ethnicity. For example, racism is based on *othering*, and the idea that there are inherent differences between one "race" and another (DeMello 2012). The further we distance ourselves from "others" the easier it is to mistreat them, which is why it is so easy, for example, to commit atrocities towards whole groups of animals bred to be consumed; because more attention is directed towards our differences than similarities. DeMello gives the example of the Holocaust where Nazis portrayed Jewish people as alien, dangerous, and nonhuman (2012). The successful "othering" of Jewish people led to one of the worst genocides in history (DeMello 2012). This is what is known as boundary work, where boundaries are created between some people and other people, or between animals and humans; or between some humans and some animals (Clinton Sanders and Arnold Arluke 1996; cited in DeMello 2012).

Ancient agricultural states developed institutionalised systems of inequality, or *social stratification* (DeMello 2012). This meant that people were categorised and ranked in a hierarchy based on arbitrary criteria, and resources and opportunities distributed accordingly (*ibid*). Those higher up the hierarchy received more of society's resources than those below them (DeMello 2012). The earliest form of social stratification is slavery, though others include the caste system in India, or the estate system which restricted land ownership based on 'nobility' in medieval Europe (*ibid*). Again, it is possible that inequalities between humans initially arose through the concept of "man" lauding control over all other animals, which then extended to 'lower' humans. For example, DeMello theorises that the decision to use some humans as slaves may have derived from the use of animals as food and labour sources. She contemplates the similarities between the ways in which human slaves and animals were both "bought, sold, branded, and confined" (DeMello 2012: 257)

## Racism and speciesism

In her book "The Dreaded Comparison" Spiegel compares speciesism with racism, or more specifically, slavery and the oppression of black people in the United States with modern-day animal agriculture. While this may seem offensive at first, because comparing a human to an animal today is a slur; Spiegel asks us to stop and ponder why this is. In many non-western cultures it is, or was traditionally, an honour to be compared to an animal (Spiegel 1996). In Native American cultures, for example, animals are admired and were believed to be 'siblings of humanity'; spirit guides; teachers and escorts who led humans into the realm of the spirit world (Dunn 2019; Spiegel 1996). This is reflected in given names, like Sitting Bull (Spiegel 1996). Similarly, ancient Egyptians, and African societies worshipped animals (*ibid*). The comparison to an animal may be an insult today, but it has not always been, and it is important to note its largely western origins.

According to Spiegel, the oppression of minority groups (such as African American people in the United States) and the oppression of modern-day animals today share the same "basic essence" and are built around the same fundamental relationship; between the oppressor and the oppressed (1996: 29). Many "disturbing similarities" can be recognised between the treatment of black people at the hands of white people in the US; and the treatment of animals at the hands of "every human culture on earth" (Spiegel 1996: 29). These include the master/slave relationship which Spiegel claims is embedded within modern culture (in the treatment of farmed nonhuman animals); the destruction of the family (during the slave trade in the 1800s African children were kidnapped from their mothers to be sold, and those in power denied that love existed between slaves and their families: likewise, and as was covered in chapter 2, modern day animal agriculture involves alienation of the farmed animal from her family); the horrific transportation conditions suffered by

both African people captured during the US slave trade, and by nonhuman animals transported across long distances often to their deaths (and note that the vessels transporting captured African people to become slaves in the US were called “cattle cars”); and finally the distancing tactics used by those in power during the US slave trade, and by those humans involved in the modern day animal agriculture industry – in both cases details of the horrific conditions suffered are kept well away from public eye (Spiegel 1996).

The people who defended slavery in the US at the time argued that abolition of the slave trade would be cruel to “African savages” because being condemned to a life of slavery saved them from so-called massacre and “intolerable bondage” of their home country, introducing them to a happier and higher standard of living (Spiegel 1996). Similarly, many today argue that farming is “good” for animals as they would not survive in the wild. Supposedly, factory farms provide food, shelter, fresh water, and safety from predators and “cannibalism” (Spiegel 1996). The idea is the same in both cases: the oppressed or captured should be grateful to their captors (*ibid)*.

## Hierarchies and arbitrary lines

The arbitrary line which was once drawn between white and black people has thankfully been rejected (by most), but still there exists a deep chasm between humans and nonhuman animals/nature (Spiegel 1996). We could ask ourselves why the line is between humans and animals and not, for instance, drawn after primates, or drawn after mammals; but this may further exacerbate the problem, according to Spiegel, because beings are still listed in hierarchical order, placing humans on a pedestal at the top (1996). This notion has existed for centuries (for example has prominence in Judeo-Christian creation story and biblical passages) but was also reflected in Darwin’s evolutionary theory, developed in 1871. Although in it he explicitly stated that that humans are close relatives of modern-day apes, all having evolved from a common ancestor, and therefor sharing a lot of commonalities with other beings (such as love, memory, attention, curiosity, imitation, reason); it was, and is, misconstrued into the concept that humans are superior to all other animals due to evolution (Spiegel 1996). This in turn made room for “Social Darwinism” which proposed that whites were superior to black people because they were more evolutionarily advanced (which Darwin himself took great exception to) (Spiegel 1996).

With the key element of Social Darwinism being that natural selection is crucial to “progress”; it followed a misconstrued concept that nature is “red in tooth and claw” (Spiegel 1996). This idea leads to the naturalisation of competition, violence, and capitalist society where someone always loses out. In modern day terms we see this construction of “nature” played out regularly, one example being nature documentaries (Bousé 2000).

Before the scientific breakthrough of evolutionary theory, religious doctrine, which placed the white “civilised” man at the top, could be used as justification for white domination, but now a “factual” scientific basis was founded in Darwinism (Spiegel 1996). Even relatively recently, charts used to explain evolution depicted distant primate relatives evolve into various hominids, through to a black person, and then finally to a fully upright Aryan male. A similar ranking system is what places humans above all other animals and justifies their gross mistreatment (Spiegel 1996). As has been argued, this ranking system began to emerge with the rise of hunting and agriculture, and co-evolved with other forms of oppression such as racism, sexism, and classism.

## Animalisation

As was mentioned earlier, ecofeminists have identified that under a western patriarchal worldview in which false dualisms are characteristic, marginalised groups are often associated with animals, or

become ‘animalised’. To return to Adams’ ‘A’ and ‘not A’ dualisms (outlined in the introduction), those in the ‘not A’ category -female, “nature”, nonhuman animal, people of colour, body – are viewed by the dominant culture as subordinate to those in the “A” category – male, culture, human, “white”, mind – and as a consequence are devalued and oppressed (Adams 2003) Women, nonhuman animals, ‘non-white racialized minorities’ (a term borrowed from A. Breeze Harper) and “nature” are all viewed as objects to exploit by those with privilege who fall into the “A” category (Adams 2003; Kemmerer 2011). Ecofeminists maintain that the dualistic conception of “culture/nature” is a means to preserve both the “ecological superiority of humans, and the cultural superiority of men” (Mallory 2010 in Kings 2017: 309).

Because women are deemed ‘opposite’ to men, they are associated with the other supposed opposites, or the “not A” category, which means women are deemed closer to “nature” (rather than civilisation/culture), the body (rather than the mind), and to animals (rather than humankind). Ecofeminists point out that women are often portrayed as emotional (which in itself has been devalued due to its association with femininity), irrational, and controlled by their bodies/biology – thus closer to “nature”/nonhuman animals (who supposedly act only out of instinct) (Kemmerer 2011; Kheel 2008). In her book *The Pornography of Meat* Carol J. Adams makes clear connections between both the animalising of women, and the feminising of animals, arguing that both are viewed as consumables under the western patriarchal gaze (Adams 2003). She notes how both animal connotations are used to describe, degrade, and trivialise women (bitch, cow, biddy, chick, sow), and feminine connotations are used to sell and also trivialise “meat” products, particularly in visual advertisements. This is a form of ‘othering’, which DeMello explains is used to ostracize both marginalised groups of humans, and nonhuman animals (2012).

Ecofeminists claim that since the Enlightenment, western scientists and philosophers have celebrated the separation of mind from body: that human beings are distinct from other animals through our supposedly exceptional cognitive abilities (i.e. Descartes’ “I think therefore I am”) (jones 2014; Kemmerer 2011; Kim 2014). However, humankind’s supposed transcendence from “nature” has in fact been extended only to (white) men: Kheel identifies the western world’s characterisation of masculinity itself as having transcended “nature” (2008). As Adams argues, because the western conception of humankind involves the transcendence of “nature” (and with this biology); and because women are associated with both “nature” and biology/body, then the definition of being human consists of being both “not animal”, and “not woman” (2003: 40). Thus, women are both “animalised” and dehumanised due to false associations of women with body, biology, emotion, and irrationality. Throughout western history, both women and animals have been considered less intelligent than men and have been exploited and controlled by men through tactics such as objectification and ridicule (DeMello 2012). The dehumanisation (and animalisation) of women has existed for centuries, but one example is found in women’s fight for suffrage, where in many cases the very notion of equal voting rights was ridiculed, accompanied by the sentiment that “you might as well propose that a cow could vote” (Adams 2003: 40).

Likewise, throughout history and particularly since the time of colonialism, and during the emergence of the African slave trade in the seventeenth century, people of colour have been compared to animals in a derogatory manner, as, like women, “non-white racialized minorities” fall into the “not A” side of the dualism (Adams 2003; DeMello 2012; Harper 2011; jones 2014; Kemmerer 2011). In colonial times, indigenous peoples and Africans were commonly referred to as animals by Europeans, many of whom subscribed to the Christian idea of the *great chain of being* which stated that God created human “races” and placed whites at the top of the chain (DeMello 2012; Kim 2014; Probyn-Rapsey 2017). Even when evolutionary thought became popular, many

people believed that although all humans were related to apes, some were more closely related than others; Africans were believed to be the "missing link" between apes and humans (DeMello 2012; Kim 2014). During the eighteenth and nineteenth centuries scientists devoted time to coming up with theories which justified and naturalised Europeans' domination over the rest of the world, particularly relating to the origins of race (DeMello 2012). Some claimed that humans all evolved from the same source, but non-whites had degenerated over time; while another popular theory said that humans derived from different sources and were actually made up of different species (*ibid*). These were especially prominent in slave-keeping countries. DeMello argues that using animal terms to refer to humans, as well as the implications that people of colour were closer to animals (or "nature") than whites was a way for white people to assert superiority and dominate people of colour (2012). Aristotle, illustrating the widely-held beliefs of his time wrote that only men possessed rationality, and therefore men's rule over women, animals, and slaves, was not only natural but necessary (DeMello 2012). Sadly, comparison of people of colour to animals in a degrading manner is ongoing; Kim details the animalisation of Barack Obama leading up to his election and during his time as president of the US, where the sales of t-shirts and posters featuring him as an ape were popular among those who did not support him (2014).

Thus, for some time it has been assumed (and generally accepted) that women, people of colour, and animals existed purely to serve the needs of men (Adams 1990 & 2003; DeMello 2012; Harper 2011; Kemmerer 2011). The idea that anyone exists to serve the needs/desires of another group may well have begun with the othering of nonhuman animals, and while such ideology continues to justify domination over all nonhuman animals and the environment today; ecofeminists maintain that all forms of exploitation/oppression (whether it be of nonhuman animals, women, or people of colour) are reinforced by one another.

## Racism, sexism, and the consumption of bodies

As well as parallels between the treatment of nonhuman animals and non-white human minorities, interconnections exist between the consumption of meat and racism. In her trail-blazing work on the connections between meat and the patriarchy, Carol J. Adams argues that meat promotes a hierarchy of not only sex/gender (which will be discussed later) but of race and class (1990). Adams claims that both racism and sexism uphold meat (particularly "beef") as a "white man's food" (53). She explains that nineteenth century advocates of white superiority endorsed meat as superior food, claiming "brain workers" required lean mean as their main meal, but the "savage" and "lower" classes of society could live exclusively on coarser foods.." (*ibid).* The racist analysis of 'professionals at the time', based on social Darwinism, was that "savages" were able to live on forms of food far below humans in the scale of development, because they were "little removed from the animal stock from which they are derived" and therefore lower down the evolutionary scale than the white man (54). It was also widely believed that the British in particular were able to dominate over "the rice eating Hindoo and Chinese and the potato-eating Irish peasant" because of their diets high in meat (Adams, 1990: 54). This notion, that meat eating contributed to the Western world's pre-eminence, was carried into the 20th century, through statements such as one made by a 1940s meat company which proclaimed "meat eating races are the leaders in progress made by mankind" (in Adams 1990: 54).

This notion was particularly popular in times of colonisation. As alluded to earlier, the Western scientific understanding of the 19th century was that Westerners were superior, intellectually and physically, to those they invaded due to their diets high in red meat (Adams, 1990; Deckha 2012; Stănescu 2016). We see this in the 1800s trope of the 'effeminate rice eater' which, as Stănescu explains, "represented a widespread and well-known colonial stereotype based on the argument

that it was the eating of meat that helped colonizers to become the more masculine, and therefore, the more dominant power in the colonial age, versus the supposedly 'effeminate' rice and corn eaters of the recently colonised countries" (2016:94). For example in an 1884 monograph entitled "brain exhaustion", J. Leonard Corning, a medical researcher and doctor, argued that the colonised population lacked the "intellectual vigour" of the English, because they did not consume the 'right' types of meat, nor enough of it (Stănescu 2016). Corning contended that

"*flesh-eating nations have ever been more aggressive than those peoples whose diet is largely or exclusively vegetable. The effeminate rice eaters of India and China have again yielded to the superior moral courage of an infinitely smaller number of meat-eating Englishmen...By far the most wonderful instance of the intellectual vigour of flesh-eating men is the unbroken triumph of the Anglo-Saxon race. Reared on an island of comparatively slight extent, these carnivorous men have gone forth and extended their empire throughout the world*" (in Stănescu, 2016: 95*).*

This racist idea of the 'effeminate rice eater', has a long history of being deployed as a means to naturalise and justify colonialism; according to Stănescu, "the idea of nutritional deficiency tied to meat seemed to offer the colonialist scientists a 'solution' – colonised populations could be 'helped' if they were simply provided the right kinds and amount of Western style meat" (2016: 95). According to Belasco (2006), cited in Deckha, "European colonial ventures were often justified as progressive crusades against… feudalistic vegetarianism" (2012: 540). Flesh free diets, says Deckha, were "denounced in the time of British empire-building as markers of anti-imperial and countercultural allegiance" (2012: 535). In her article "Eating Dingoes", which highlights the linkages between white imperialism in Australia and sheep eating, Probyn-Rapsey explains that "alongside the consumption of animal bodies (indirect and direct) are the consumption of cultural ideas about what and who is good to eat and who or what is not" (2017: 39). As with colonisers of Aotearoa, Australian settler colonialism, she explains, has used the "dominant norm of sheep edibility" to build "not only material ecologies (landscapes indelibly shaped by hoof, by plough and by fences in the annexation of indigenous country), but also cultural myths that shape identities (the shearer, the drover, the pastoralist/shepherd, the bushman, the settler/farmer ) all born out of the control of animal life and death, and the task of determining who gets to eat who, and how" (Probyn-Rapsey, 2017: 39).

Indeed, even the idea of the food chain with humankind at the top is a Western ideal according to Deckha, as is the notion that animals exist purely for human consumption (2012). Deckha also argues that "conceptions of animals and idealised humanity are deeply culturally contingent" (2012: 537). For example, the distinctions drawn between "food" animals, "research" animals, and "companion animals" are all cultural or social constructs which have been entrenched over time (Deckha 2012). That is, what (or who) is considered edible, or as a "correct" source of protein is enforced by culture, and as is often the case, usually the dominant culture of white colonisers. As an example from Aotearoa, Armstrong discusses the myth that was popularised over history that Māori relied heavily on Moa meat for protein, and that as Moa died out Māori began to struggle increasingly (2013). This was in fact not the case but served as another way to justify colonialism and the introduction of sheep and cows. The idea that red meat is necessary, normal, and natural is an entirely European ideal, spread through colonialism, the normalisation of its consumption linked to racist rhetoric.

As Adams surmises:

"*racism is perpetuated each time meat is thought to be the best protein source. The emphasis on the nutritional strengths of animal protein distorts the dietary history of most cultures in which complete protein dishes were made of vegetables and grains. Information about these dishes is overwhelmed by an ongoing cultural and political commitment to meat eating*" (1990:55).

Increased levels of meat consumption may have also legitimised sexist ideologies. According to Adams, meat, especially red meat, has historically been viewed as the epitome of masculinity. For example, during the World Wars One and Two government rationing policies reserved the right to meat for soldiers (the ultimate masculine man) (Adams 1990). This meant that during WWII, the consumption of meat per capita in the army and navy was roughly two and a half times that of the average civilian (*ibid*). According to Adams, American soldiers were basically force-fed beef while women and children back home lived ration-to-ration (1990). This all stems from a notion that meat is needed for strength, and therefore necessary for a "working man" (Adams 1990). Patriarchal culture spreads this myth that meat promotes strength, and the attributes of masculinity are achieved through eating these 'masculine foods' (Adams 1990). This mythology declares that because men should be "strong" and meat-eating promotes strength; men (and particularly white men) need meat more than anyone else, ignoring that women (especially pregnant women) require more iron and protein than men (Adams 1990). This myth has played out throughout history, and is still prominent in society today, seen in sport, media, and popular culture (Adams 1990). The linkage between men and meat means that in the past (and sometimes presently) men who do not eat meat have been considered effeminate (Adams 1990). Adams argues that meat consumption acts as a reassurance of 'maleness', even though the majority of men do not spend their time hunting animals in the wilderness, but rather sitting at an office desk (Adams 1990).

Just as meat is associated with men, Adams argues that vegetables are associated with women, as historically women are the "gatherers" (1990). She asserts that just as women have become devalued in a male-dominated and meat-consuming world, so has the food consumed by women (Adams 1990). Plant foods, associated with second-class citizens, are considered second-class protein sources (Adams 1990). Adams draws parallels between the once widely-held belief than women could not exist/thrive on their own; and the widespread notion that vegetables cannot make a meal on their own (despite the fact that meat is in fact recycled plant food, and vegetables provide on average more than twice the vitamins and minerals of meat) (Adams 1990). For centuries, and still lingering today, meat has been upheld as both powerful and irreplaceable (Adams 1990). This can be seen today in rhetoric surrounding an assumption that a growing population means an increased demand for animal products – "meat" is considered so vital to human survival that ceasing its consumption is not seen as an option.

Such "cultural and political commitment to meat eating" is reflected in the *Animal Industrial Complex* which as Twine argues, enforces meat consumption as the norm with the claim that demand for animal products will increase with the increase in human population (2016). The assumption about this supposed demand is the primary focus on most research around finding solutions to global hunger, particularly in sustainable development discourse, when, in reality, it reflects capitalist (and colonialist) attempts to homogenise diets across the globe in search of new markets for meat products (Twine 2016).

## Expansion and appropriation

Meanwhile, as agriculture-fuelled empires began to expand (due to the depletion of agricultural resources), colonisers appropriated land to graze animals, displacing and murdering millions (Nibert 2002). Most colonisers viewed indigenous humans as they did other animals – simply obstructions to profit; and this is turn lead to massacres of humans and nonhuman animals alike (Nibert 2002). Some of the earliest conceptions of capitalist agriculture were evident in the British Isles, where land was stolen from peasants in Ireland, Scotland, and rural England, forcing people to move to the city

and work for wages, unable to grow their own food (Holt-Giménez 2017). During this period common property rights were abolished and land which was originally dedicated to gathering and growing food by and for peasants was fenced off and privatised in order to graze sheep and cows for the wealthy (Holt-Giménez 2017). For example, the conflicts in Ireland, while often framed as being built on religious/ethnic tensions in fact have economic foundations: as Britain strove to expand its Empire, land was seized off the Irish in order to raise animals in the 12th century (Nibert 2002). By the 1700s, British landowners "owned" 86 percent of Ireland, while Irish people were forced off land and starving; so that British could export beef, butter, and linen to England (Nibert 2002). While resources were used to grow beef for the British, Irish peasants turned to potatoes as an acre-economising crop, but when disease struck the main source of food in 1846 leading to widespread famine (genocide), many were forced to emigrate. Everywhere, the privatisation of land undermined the abilities of peasants to grow their own food, and a new class of destitute and landless arose, obliged to move to urban areas and work for wages, thus fueling the Industrial Revolution (Holt-Giménez 2017). Meanwhile, Britain continued to expand, conquering territories with raw and fertile land on which to raise sheep and cows (the last of which was, of course, New Zealand).

As Crosby discusses in his work on "ecological imperialism", colonialism has not only concerned human invasion, but the introduction of the animals brought by the settlers, domesticated or otherwise (1986). European colonisers brought with them domesticated animals for food such as sheep, cows, and pigs; alongside "pests" such as rats; all of which steadily took over the landscapes (1986). In some cases, animals such as pigs were "planted" so as to ensure a steady supply of food for when settlers came back with their families.

Most nonhuman animals were set to free range and forage for native plants and other animals (pigs being omnivorous ate lizards, frogs, and insects) (Crosby 1986). Compared to western Europe, food in the colonies was plentiful, and in most cases the peoples of the invaded lands had very few or no domesticated animals, meaning the introduced animals quickly populated the new lands (Crosby 1986). Ironically, most of these introduced nonhumans went 'feral' to the point they were classified as pests (like brumbies in Australia) and ordered by law to be killed, because they competed with domesticated animals for resources (Crosby 1986). Colonisation is therefore not just about the impacts of humans, but the lifechanging animals who altered landscapes and illustrated a new relationship between humans and animals (Crosby 1986).

One of the last places to be colonised was Aotearoa/New Zealand, which seemed the perfect location for sheep and cattle raising to British colonists seeking fresh fields and pastures. With a wetter, and more temperate climate than Australia, New Zealand was the perfect spot for another of England's 'gardens' (Armstrong 2016). As Armstrong describes, it was not long before New Zealand was transformed "from a land of forests and wetlands" into "a land of pasture, a kind of off-site, nation-sized farm for the British Empire" (2016: 108). To achieve ideal conditions for sheep or cow rearing, native forests were burnt, wetlands were drained, and European grasses introduced (Armstrong 2016). In order to become a "farm-supply and population-overflow unit for the British Empire" says Armstrong, "by the end of [the 19th] century half the remaining native forest had been cut for timber or burnt off to make space for pastureland. Eighty-five percent of New Zealand's wetlands were drained for the same purpose" (2013: 25). Thus, Aotearoa became "another of Great Britain's 'empires of grass'" (Armstrong 2013: 40). Today 45 percent of Aotearoa's total land mass is taken up by agriculture (31.9 percent for sheep and "beef" farming; 9.8 percent for "dairy" and less than one percent for fruit and vegetables) (Ministry for the Environment and Statistics New Zealand 2018).

Alongside ecological destruction, colonisation brings with it the violent destruction of the families, homes, livelihood, society, and culture of the indigenous people of the land, in New Zealand's case Māori. Samuel Butler, an early English settler and author who owned a sheep station in Canterbury, describes the apparent ease of cultivating a sheep station in New Zealand where the "natives" posed no danger, "being few in number and of an intelligent and tractable disposition" (in Armstrong 2016: 105). In doing so, he completely misrepresents the relationship between the colonial government and Māori. As Armstrong describes,

*"far from being harmless, few, and tractable, Māori proved to be well armed, well organised, and more than capable of adapting their vigorous warrior traditions to the modern world. Despite the inexorable tide of crown troops, they won many victories and staved off defeat for longer than expected, coming up with new tactics ranging from trench warfare to passive resistance. But the disproportionate weight of the British Empire made the eventual outcome inevitable, and region by region, those who continued to resist had their land confiscated by the Crown, and their Pā and crops replaced by flocks of imported sheep nibbling imported grasses*" (2016:106).

In the USA, where cows were used as a colonising tool, indigenous peoples were also driven off land and mass genocides took place in order to make way for "cattle"[7] ranches (Norgaad et al 2011). In their writing about the Karuk people, indigenous to California USA, Norgaard et al describe how the forceful taking of the land for activities benefitting capitalism, i.e "cattle" ranching has contributed to disconnection and isolation from traditional Karuk food cultivation practices, and is one of the major reasons for food insecurity within the Karuk community – 90 percent of tribal members live below the poverty line (however, as Norgaard et al remind us, it is important to note that contemporary as well as historical circumstances produce this hunger) (2011). In the case of Aotearoa, Kirsty Dunn writes that the colonial agenda of land dispossession for agricultural purposes led to diminished access to mahinga kai (food cultivation/gathering) sites as well as nutritious, culturally appropriate, and sustainably produced foods, which has led to serious health affects for Māori (2019).

## The capitalist food system emerges

As was covered in the previous chapter, the current global food system is a capitalist one, where food is heavily commodified. Scholars such as Holt-Giménez contend that the reorganisation of society, once agriculture was established, set the foundations for capitalism (2017). Agriculture encouraged new, complex forms of governance, exchange, and wealth all of which contributed to shaping the system (*ibid*). Wealthy landowners with more advanced technology and resources were able to produce more, therefore pushing prices down and forcing the remaining peasants out of farming, further consolidating land and farm ownership. This enabled large scale farmers to dominate food production, and to pass tariffs and restrictions such as the UK Corn Laws in 1815 which ensured food prices were kept high. Those in the lower and working classes only earnt enough to buy a little food, and nothing more, which kept them working, fuelling further economic growth and wealth for those at the top (Holt-Giménez 2017).

As Holt-Giménez explains, most of the world's population were peasant farmers as capitalism began to emerge (2017). Industry development was much more profitable to capitalism than peasant farming, therefore capitalism needed to find a way to utilise the social and environmental wealth held in rural societies. This was achieved through the displacement of large sectors of the peasantry and through separation of the producer (the peasant) from the means of production (the land) all by

[7] To borrow from Kathryn Gillespie in "The Cow with Ear Tag #1389" I try to avoid using the word "cattle" to describe bovine beings because of its etymological roots in "chattel" which means property, and has clear connotations with chattel slavery.

the monopolisation of agricultural supply to meet industry demands by large landowners (Holt-Giménez 2017). Such forcible displacement created an influx of poor and homeless people to make up a cheap labour force, fuelling the industrial revolution (*ibid*). This also paved the way for agriculture to become industrialised, as the process required capital from the industrial sector as well as more land, cheap labour sources, and cheap food, all of which, Holt-Giménez argues, had been confiscated from the peasantry (2017). This process also occurred during colonisation, for example Dunn explains that the proliferation of European methods of farming introduced species on expropriated land in Aotearoa provided the catalyst for tangata whenua (people of the land/sheltering people) to move away from their iwi, hapū, and whānau lands into the cities, where the isolation from traditional food practices has since fostered a reliance on supermarkets and fast food outlets, a major cause of the adverse health effects experienced disproportionately by Māori communities today (2019).

Previously in this chapter I discussed both how slavery may have its roots in domination over "nature" and other animals, as well as the connections between the horrific treatment of people deemed slaves, and the similar conditions faced by nonhuman animals today in the industrialised farm setting. There is also evidence that slavery was fundamental in developing the industrial capitalist economic system we know today. Holt-Giménez maintains that slavery played a crucial role in the development of capitalism because prior to it, the peasantry could not be forced to grow crops on an industrial scale. In the south of the US, for example, white settlers had either killed or driven off indigenous peoples to appropriate the land (in much the same ways they did with native species of other animals), and thus were left without a workforce. Capitalism's solution to a labour shortage, according to Holt-Giménez was the enslavement and translocation of people from West Africa. Once slavery was finally abolished, after the civil war, a new capitalism emerged; yet it was enabled by the profits, institutions, networks, and technologies born out of slavery, colonialism, and land appropriation (Holt-Giménez 2017). So, whilst some still argue the abolition was motivated by capitalism (it was thought to be economically advantageous to abolish slavery and have them work for wages and contribute to the economy), capitalism's very foundations may in fact be in slavery which in itself may have stemmed from domination over nonhuman animals.

In the late 18$^{th}$ century, industrialisation arrived in the west, revolutionising agriculture by replacing subsistence farming with farming for profit (Stull and Broadway 2004). The demand for commercialised food was shaped by the rapid growth of urban populations; and farmers responded by increasing output (Stull and Broadway 2004). To do so, farmers began purchasing fertilisers, improving drainage, and incorporating more advanced technology, such as horse-drawn machinery (Stull and Broadway 2004).

Global capitalism continued to evolve through the nineteenth and twentieth centuries, growing and expanding through colonialism, industrialism, and warfare. European empires invaded lands and formed more colonies, expanding economic and military power, and exploiting their resources to allow for a flow of cheap materials to the centres of imperial powers. The increase in the production of commodities required the liberalisation and deregulation of markets so that goods and money could flow freely without being obstructed by tariffs and trade barriers (Holt-Giménez 2017).

Together, institutions, treaties, and regulations which shaped and governed food on a global scale made up the first colonial "food regime", a "uniquely capitalist phenomenon" according to Holt-Giménez (2017:32). This was the first regime to dominate the world's food systems, and it followed the logic and interests of Northern capitalism. Although Holt-Giménez acknowledges that not every local and regional food system was completely dominated by a colonial, capitalist regime, the colonial food regime was the first hegemonic regime; a universal system which had consolidated a

powerful set of institutions and rules influencing food production, processing, and distribution on a global scale. So whilst most of the world's people still traded and ate their food as they had done for centuries, they were hired (or forced) to harvest export crops, as international commodities were introduced into diets, such as sugar, coffee, wheat, rice and maize (Holt-Giménez 2017). Although the advancement of technology and free markets are often given credit as being the main factors in the development of capitalism, Holt-Giménez argues that upon inspection, the rise of the capitalist food regime provided the conditions for capitalism to emerge. Regulating the production and distribution of food through privatisation; the violent ways in which land and resources were appropriated by the state; and the exploitation of labour through poverty and slavery are just a few examples, he says (2017). This "pattern of regulation, dispossession, exploitation, technological development, and market expansion" has repeated itself numerously during the development of capitalism and is a pattern which still characterises food regimes today (Holt-Gimenez 2017: 33).

Agricultural industrialisation originated in the US in the early 20th century (Stull and Broadway 2004). Characterised by mechanisation, chemical farming, and food manufacturing (adding economic value to agricultural products through processing and packaging); the aim is to sell crops and animals at the lowest costs possible, by creating scale economies, purchasing inputs from other sectors, and the substitution of capital for labour (Stull and Broadway 2004). As was covered in the second chapter, science and technology fuelled industrialisation of animal agriculture, allowing humans to have complete control over nonhuman animal reproduction, and therefore increase efficiency. For example, in 1950 the average "dairy" cow in the US produced roughly 2520 litres of milk per year (Marcus 2005). By 2002, the typical cow produced about 8780 litres in a year – a 240 percent increase (*ibid*). Likewise, in 1950, "meat" chickens (known as broiler chicks) required 70 days to reach slaughter weight; by 2000 the time period was reduced to 47 days, and the 47-day-old chick was two thirds bigger than its 70-day-old counterpart from 1950 (Marcus 2005). Since the 1960s, significant advancements have also been made in reducing the costs of slaughter and meat processing (Marcus 2005). Again, this has meant fewer, but massive-scale slaughterhouses; the majority of which reside in poorer, rural areas (Marcus 2005). Industrialisation of agriculture also meant fewer people employed on farms; their work replaced by machinery (Stull and Broadway 2004).

During the 1970s across the western world, policies were introduced to "liberalise" trade and lower the taxes of the wealthy, as well as reduce labour and environmental regulations (Holt-Giménez 2017). A free market meant freedom for large corporations to do as they pleased, including those which rely on nonhuman animals for profit, namely the agricultural, entertainment, and pet industries. Thanks to industrialisation of animal agriculture, in 2003, the United States became the first in the world to raise more than 10 billion farmed animals in a single year; over twice the number raised in the US in 1980, and 10 times the number raised in 1940 (Marcus 2005).

To encourage this intense industrialisation of agriculture, the US had adopted a "get big or get out" policy (Marcus 2005). Egg farmers were the first to jump on board, developing battery farms in the 1970s, and the rest of the sector soon followed suit (Marcus 2005). The emergence of factory farms meant that the numbers of "farms" increased as their sizes dramatically increased. These "farms" were owned by a very small number of elites, meaning the actual farmers became more like "sharecroppers", raising more animals than ever, but receiving only a small fraction of profit per individual animal (Marcus 2005).

## Linked oppressions

The violence of capitalism has unleashed itself on not only animals, but marginalised groups of humans, and on the environment. Often, these intersect to show deeply rooted problems caused by a violent and oppressive economic system. In his book "Environmentalism of the Rich" Dauvergne discusses how environmental problems, often experienced worst by those in poorer, or marginalised communities, can be clearly traced back to imperialist, colonialist histories marked by violence and oppression (2016). Similarly, there is evidence that processes such as market de-regulation and free-trade under capitalism have made life not only worse for farmed animals, but for those in poor communities. In her chapter entitled "*Penalizing the Poor: GATT, WTO and the Developing World*' Shiva describes how free trade had a negative effect on the welfare of cows, and infringed on the cultural, religious, and environmental rights of poor communities in India (1999). India's new "livestock" policy in 1991 was introduced to ensure trade liberalisation by stimulating meat production and encouraging the opening of slaughterhouses. As Shiva argues, this put both animals and vulnerable communities at risk, as it promoted a violent economy which went against the cultural and religious beliefs of much of the human population (*ibid)*. Capitalism facilitates violence towards other animals in the name of profit, but also towards humans. We saw this at the very beginning of the chapter, when exploring how the domination over other animals (in the strive for wealth) allowed for humans to oppress and dominate each other in the form of class systems, racial, and gendered discrimination. This in turn, has created a food system in which, not only are animals heinously and unnecessarily exploited, but food itself is unevenly distributed leaving millions of humans starving, despite a planet that is suffering the effects of overproduction and waste from industrial animal agriculture.

Given capitalism's role in exacerbating the oppression and exploitation of other animals, it may come as no surprise that many scholars maintain that capitalism and colonialism have roots in humankind's domination over other animals. Capitalism and human dominance over animals arguably not only developed side by side, but many believe the two are inextricably linked, and intersect in a myriad of ways. There is much evidence to suggest that the capitalist system stemmed from humankind's violent domination over nature (Torres 2007). While today, humans' domination and exploitation of nature and other animals is naturalised, along with a notion that "nature" is "red in tooth and claw"(particularly in western conceptions), there is evidence to suggest this has not always been the case in terms of how humans perceived themselves amongst 'nature' and other species; and that perhaps capitalism has played a vital role in this perception (Torres 2007: 70). Again, it represents a western patriarchal worldview, spread through colonialism.

While it is beyond the scope of this thesis to delve too deeply into the history of the current capitalist food system, it is important to understand the background and challenges faced in terms of "sustainably" feeding a hungry planet when food is so heavily commodified. Looking back to the past, we can see some of the same problems faced with the food system today; and understanding the food system as inherently capitalist helps explain why, as Holt-Giménez notes at the start of his book, today farmers go broke overproducing food in a world where one in seven people go hungry (2017). During the Great Depression in the 1920s, for example, American farmers in debt from a combination of low grain prices and overextended loans, began to produce even more food, which only drove prices down further. Because of the economic crisis, high unemployment, and growing gaps between the rich and poor, no matter how much cheap food the farmers produced, millions could still not afford it. Desperate to drive prices up, farmers dumped milk on the roads, slaughtered sheep in the paddocks, and drove crops into the ground. Meanwhile, long breadlines of destitute, hungry people wound through the nation's cities (Holt-Gimenez 2017).

This brief glimpse of oppression throughout Western history of both humans and other animals demonstrates not only their interconnectedness, but that the roots of oppression and exploitation stem from economic interests. As Nibert argues, “the oppression of humans and other animals developed in tandem, each fuelling the other” (2002: 50). A change in perception which ultimately lead to the mistreatment and exploitation of nonhuman animals was the result of the human pursuit of material interests and domination of the earth, rather than any kind of instinctive or “natural” behaviour (Nibert 2002). By the same token, animals may have been used as “stepping stones” for the materially-motivated exploitation of humans by humans, such as slaves, labourers and peasants, or marginalised groups such as women and indigenous people (*ibid)*. “The theory of oppression, with its emphasis on the underlying economic/competitive motivation for oppression, easily applies to the treatment of devalued humans and other animals from the start of hunting through the development of capitalism” (Nibert: 2002: 51). There is strong evidence that oppressive treatments of humans and nonhuman animals alike are founded upon material benefits gained by elites and reflected in prejudices and tendencies for humans to exploit whomever they define as “lesser beings” (Nibert 2002). Food systems have always had some form of social division, though as we have seen, this didn't always mean that some people had more power over the food supply than others. Power over food began with nonhuman animal “husbandry”, the spread of irrigated agriculture, the differentiation of tasks, and the struggle to control agriculture's surplus (Holt-Giménez 2017).

To bring together all the information about the current food system which has been covered thus far, we could return to the story of the lamb flap, from chapter three. For the individual sheep herself, we know her life would have been significantly shortened – sheep who become “lamb meat” in New Zealand are slaughtered under the age of 12 months (Beef & Lamb NZ 2010) while the average lifespan of a sheep is between 10 and 12 years (Armstrong 2016). In her life she would have been subject to biological control by humans (for example the control of her mother’s reproduction to ensure that she was born in a timeframe in tune with the demand for her flesh; along with the probability that her mother was genetically selected for to produce more than one offspring at a time); as well as painful and invasive practices such as the removal of her tail without anaesthetic. When her time for slaughter came it is likely she faced stressful and crowded conditions during transport to the slaughterhouse, and human employees working in a stressful, fast-paced environment at risk of workplace injury, substance abuse, and mental health concerns. Additionally, her very existence in the land symbolises colonial oppression; exploitation of the marginalised; human, western, patriarchal domination of the natural world; and environmental degradation. One can hope that when she is killed it is quick because the voltage on the bolt gun is high enough to knock her unconscious before her throat is slit, but unfortunately even this is not a given. And when her body is butchered for consumption (because after all she belongs in the “not A” category and thus exists only for purposes of consumption by the “A” category), her belly fat is deemed not worthy for those who are privileged enough to reside in New Zealand and can afford better, and yet the capitalist economy dictates that every last scrap must generate profit, and thus this body part is sent to some of the poorest people in the world, immensely contributing to the deteriorating health of those people; serving as a symbol of unequal power relations. Ironically, the fact that the people in Pacific Island nations (such as Papua New Guinea) must rely on cheap foods such as lamb flaps from Australasia is because their traditional food sources such as fish have been drastically depleted by the introduction of large industrialised fishing corporations who promised to bring “development” to the nations (Gewertz and Errington 2010). This is just one example of the intersecting oppressions within the food system, and how and why the current capitalist food system serves very few.

# Chapter five: Structural conceptions of hunger

This chapter will use an ecofeminist lens to outline how hunger is a structural problem, highlighting the intersections of suffering between some of the most exploited in the world, and drawing on findings from previous chapters about how "livestock" farming contributes to hunger. Given the historical roots of oppression which form the foundations for global hunger and malnutrition, it comes as no surprise that many are quick to criticise sustainable development's "solutions" to ending world hunger which, at the best, completely fail to address these causes, and at the worst actually exacerbate the problem through capitalist and andro-focused solutions. The following section provides an ecofeminist critique of sustainable development.

## Ecofeminism and sustainable development

Ecofeminism, as outlined in the introductory chapter, is concerned with all forms of oppressions, and their interconnectedness under patriarchal and capitalist society. It is a merging of ecology, a science which recognises the interdependence and interconnectedness of all living systems, and feminism, a movement which seeks to end all oppression and advocates for the "other" in oppressor/oppressed relationships (Rochette 2002). In the context of sustainable development, ecofeminism recognises the close relationship between environmental degradation, and the conditions of the "other" living in 'developing' countries, namely women (Rochette 2002).

Women are disproportionately affected by environmental destruction. For example, many scholars have pointed out that in most "developing" countries, women are responsible for tasks such as gathering water, food and fuel (Allison 2017; Gaard 2015; Kings 2017; Rochette 2002). As climate change increases occurrences of natural disasters such as droughts, this increases the work burdens for women and girls who must walk further to locate these resources, forcing some to forfeit education and other opportunities (Allison 2017; Kemmerer 2011). Women are also particularly vulnerable to the outcomes of climate change, including poverty;, residence on marginal land prone to sinking, erosion, or flooding; precarious or informal employment; and increasing exposure to waterborne disease (Allison 2017).Women and children are 14 times more likely to die in ecological disasters than men, and women who do survive disasters are faced with further adversities such as increased likelihood of sexual assault (Gaard 2015).

Annie Rochette argues that sustainable development does not sufficiently address the marginalisation of the poor, and especially women in developing countries, where, although women are disproportionately affected by climate change, they are largely excluded from the decision-making process of sustainable development (2002). Likewise, Kings argues that despite research which clearly demonstrates the fact that poorer, rural women bear the brunt of climate change, much environmental and climate research "remains ignorant to issues of gender, class, race, caste and sexuality" (2017: 73). On the other hand Greta Gaard, another ecofeminist writing on women and climate change, argues that sustainable development discourse tends to focus on women rather than gender, which constructs women collectively as victims of environmental degradation in need of rescue, as well as emphasises their presumed intrinsic closeness to nature through family caregiving and subsistence labour; a rhetoric which has both capitalised on women, and ignored the cultural limitations of the women-nature connection (2015). Gaard identifies that a shift away from women as a group to 'gender as a system structuring power relations' is powerful in terms of responses to climate change (2015:22). It is a shift that makes visible the fact that while women are

most affected by the outcomes of climate change (which includes food insecurity), their vulnerability is not intrinsic – it results from structural inequalities produced through gendered social roles, discrimination, and poverty (Gaard 2015).

These structures are predominant within sustainable development discourse, as emphasised by ecofeminist scholars in the field, who agree that development is inherently androcentric in theory and practice. Many argue that sustainable development uses a mathematical/economic structure which is too narrow and ignores the reality of complex gender and other social relations. For example, Wendy Harcourt argues that the expression of economics as purely mathematical is reductionist and inadequate for explaining obscurities and contradictions in the process of development (1994).

## Intersections of oppression

Feminist movements, as well as early ecofeminism have since received criticism for their ignorance towards issues of race and class, as well as assumptions that all experiences of women can are the same, so the umbrella of ecofeminism is a fix-all (when in fact perhaps the notion of many feminisms/ecofeminisms may prove more helpful) (Kings 2017; Taylor 1997). For this reason, ecofeminists also criticise sustainable development for its failure to take an intersectional approach and consider that the prejudices faced by women in developing countries often have more to do with factors of class, religion, ethnicity, and caste, than they do gender (Kings 2017). For example, as Kings points out, the experiences of a woman who is a subsistence farmer in rural India will differ vastly from that of a woman who is a university lecturer in urban India (2017).

## Global market economy

Rochette argues that the concept of sustainable development is deeply flawed because it does not challenge the dominant model of development it replaces and remains dependent on the global market economy, and is therefore tailored to capitalist objectives (2002). She argues that sustainable development remains based on a view that the only way to achieve a good standard of living for all is through economic growth (ibid). Sustainable development claims that sustained economic growth is the solution to both environmental degradation and poverty (Rochette 2002). Rochette identifies two major problems with this. The first is that it places environmental protection at risk by prioritising development (2002). As was covered previously, there is a strong argument that economic growth is the leading cause of environmental degradation (Dauvergne 2016). Her second grievance is that sustainable development fails to recognise the global market economy's exploitation of "Nature", and marginalised groups of people (2002). For example, in the last chapter I discussed how a capitalist structured society has been the root cause of much inequality, particularly within the global food system. If sustainable development seeks to "end hunger" it will not do so without acknowledging that a focus on economic growth is a major cause, if not the major cause, of creating that hunger.

According to Harcourt, development discourse divides the world into "haves" and "have-nots" and is thus blind to diversity and other cultures' ways of living (1994). It has endorsed economic growth as the only goal of development, making it appear as a universal truth, and allowing it to subdue both non-Western ways of thinking, and "Nature" (Harcourt 1994). Many ecofeminists critique the focus on economic growth in development discourse for being a problematic, Western/patriarchal model, resemblant of colonialism. As Harcourt explains, [acknowledging the risk of idealising or exoticizing other cultures], many are critical of how development discourse confidently promotes the Western model of production, where productivity of work is defined by satisfying individual desires rather than fulfilling community needs (1994).

## Economic gain and environmental protection are at odds

Following on from this, Rochette argues that sustainable development has failed to take seriously the notion that continued economic growth will eventually lead to the destruction of the planet (2002). Like Dauvergne, she argues that sustainable development is simply a means to promote trade and economic concerns under the guise of being 'green', while in reality the notion of economic growth and environmental protection existing concurrently is paradoxical (Rochette 2002). Gaard and Narayanan also critique the impossible concept of sustainable development as a renewed appeal for constant economic growth on a planet with finite resources (2015; 2016). If the western standard of living was to be attained by the entire planet's population, two additional planets would be needed - one for the raw materials, and the other to dump the waste produced (Maria Mies, in Rochette 2002). Sustainable development as a model is therefore both unattainable and unsustainable (Rochette 2002).

Sustainable development is also based on the patriarchal perspective where humans are separate to, and transcend "nature", a view which has in fact led to the overexploitation of "nature" (Kings 2017; Rochette 2002). Narayanan argues that in development discourse, "nature" is perceived as an economic good, only valuable to the extent that it can sustain maximum economic growth (2016). She claims that "nature" is only understood in terms of "natural resources" or "nature capital" rather than having any inherent value (Narayanan 2016). According to Waring, to the capitalist economic system the environment is often not valuable until is it destroyed and transformed into commodities for the world market, in which case such destruction is labelled "growth" or "production" (in Rochette 2002). This is because under capitalism, the value of people and nonhuman nature lies in their capacity to achieve a certain end, such as economic gains or political power, rather than the survival of humanity, other species, or the planet (Rochette 2002). As Gaard notes, a clean lake that may provide women with fresh water for cooking and crops has no economic value until it becomes polluted and a company must pay for its restoration. The clean-up activity, she argues, will almost certainly be performed by men, and is recorded as generating income (Gaard 2015). Likewise, economic indicators such as GNP exclude women's unpaid labour, and similarly, the food that women produce in developing countries is not counted in agricultural statistics, even though it subsidises visible agricultural development (Rochette 2002).

This illustrates how the global economic system undervalues both the unpaid work of women, and the environment (Rochette 2002). Critterdon addressed the "shadow economy" of women's unpaid labour, and linked the gendered economy with ecological economics, arguing that in economics a "free rider" is someone who benefits from a good without contributing to its provision, and by that definition, both the family and the global economy are free riders, as both are dependent on the women who provide labour for little or no compensation (2001, in Gaard 2015). Likewise; I would add the global economy is currently free-riding on the billions of nonhuman animals used in agribusiness, who receive nothing in return for their labour and bodies which become commodities. Gaard maintains that the global economy is based on excessive takings from women, indigenous communities, the "Two-Thirds World", nonhuman animals, and ecosystems (2015).

Maria Mies argues that the "myth of catching up development" is based on a capitalist, growth-oriented system, the "product of white, Western, male thinking", it is "essentially reductionist and serves as an economic structure based on exploitation, profit maximisation and capital accumulation in the North" (in Rochette 2002: 159-160). She argues it also perpetuates the oppression of the South, Nature, and women, terming these three groups as "the colonies" as they endure oppression, exploitation, and appropriation under hegemonic power (Mies in Rochettee 2002). Likewise, Shiva argues that development acts as a continuation of the process of colonisation; an extension of

western patriarchy's project of wealth creation which relied on exploitation, or exclusion, and degradation of women, "nature", and other cultures (in Rochette 2002:160). She claims that today throughout the 'developing world' women, peasants, and indigenous peoples are fighting for liberation from 'development' just as they earlier struggled for liberation from colonialism (*ibid*).

Kings argues that the idea that humankind is separate from "nature" has led to damage inflicted upon the environment which in turn leads to harm inflicted on all of humankind, not just women (2017). The attempt to reunite and recover the relationship between humankind and "nature" is fundamental to ecofeminist thought and should be included as an intersectional approach to sustainable development, to ensure meaningful solutions are attained (2017).

## Techno-science "solutions"

A key characteristic of sustainable development discourse is the use of techno-science solutions to environmental and social problems, a component of patriarchal ideology (science, technology, reason are seen as superior to emotion, reproduction, labour etc in the false dualisms identified by ecofeminists). According to Kheel, science and technology function to give humans an inflated sense of power (2008). Although our species has wreaked havoc on the planet, we are led to believe that scientific knowledge can rectify this (which will no doubt generate more income in the process) (Kheel 2008). For example, sustainable development has encouraged the transformation of sustainable subsistence agriculture in the South to cash crops for export to promote economic development. (Holt-Gimenéz 2017; Rochette 2002). This includes what Rochette calls "unsound western practices" such as monocropping and excessive use of fertilisers and agrichemicals, which have extremely detrimental effects on soil and waterways, as I described in chapter one. Western methods of agriculture include a heavy focus of science and technology, and often devalue practices such as symbiotic practices utilised by indigenous peoples. This is again linked to the capitalist desire for speed and growth (time is money). According to Gaard, debt repayment programmes (called "structural adjustment") encourage 'developing' countries to produce cash crops for export rather than subsistence crops as a means to pay off debt (2015). The involved biotechnology corporations then promote high-yield seeds which require expensive inputs such as fertilisers, and monocropping methods which disturb subsistence foods, ruin biodiversity, and lower water quality, all of which produces hunger and additional debt (Gaard 2015).

From a Western and androcentric point of view, communities relying on subsistence economies fit into the "poverty" category, because they do not contribute to/rely on the market economy or consume/produce commodities; even though basic human needs are satisfied (Rochette 2002). Rochette argues that the conversion of subsistence crops to cash crops for export has increased only the living standards of male elites, at the expense of impoverished women, children, and other marginalised groups, who, displaced by cash-crop production, are often unable to satisfy requirements for food (Rochette 2002). As was outlined in chapters one and three, a third of all arable land is used to grow crops for "livestock", and the majority of crops grown across the globe become food for "livestock" consumed by humans in "developed" countries (Holt-Gimenéz 2017; Schlottman and Sebo 2019). At the same time, the production of cash crops has also increased the work burden for women in these areas because the degradation associated with these methods of agriculture has meant they must travel longer distances for food and clean water (Rochette 2002). The globalisation of agriculture has meant less land available for subsistence crops and local production, which leaves impoverished women with few resources to sustain their families and communities (Rochette 2002). Therefore, the majority of those who have most benefitted from "development" in 'developing' countries are the ruling male elites and the urban middle classes

while development programmes have generally ignored the realities of the most marginalised in society (2002).

Gaard argues that issues which traditionally women organise around, such as environmental health, habitats, and livelihoods, are sidelined by techno-scientific solutions which take prime position in climate change solutions and funding (2015). Part of this is attributed to the fact that Western civilisation considers episteme (objective, rational knowledge) as the only pure form of knowledge, and superior to techne (craftmanship, making, doing) which is reduced/devalued to little knowledge at all (Harcourt 1994). Allison proposes that science and philosophy have elevated and fetishized the objective view, while many other ecofeminists criticise traditional Western ethics for its overvaluing of reason and objectivity, which devalue women's positions, envisioning justice as the equal distribution of resources between individuals with rights, rather than emerging through relationships that shape identities and responsibilities (2017; Gaard 2015). Thus, both women's typical work such as caring and nurturing and work towards sustaining local environments are devalued as they do not constitute "book work", nor are viewed as contributing to the economy (Harcourt 1994). According to Harcourt, by valuing only paid productive work, development has failed to value some of the more fundamentally healthy and creative practices, the majority of which are performed by women (1994).

With regards to food security, sustainable development through 'goal number two' (ending world hunger) promotes solutions such as increasing the productivity of crops or nonhuman animals, through either technical solutions, or through genetic engineering. A response which does not seek to reduce or cease the use of animals for food is questionable considering, as we saw in the first section of this thesis "livestock" farming is the number one cause of environmental degradation, most of this affecting the most marginalised humans in society, who are disproportionately women. Thus, sustainable development with its androcentric structure obsessed with science and 'supposed' objectivity has failed to improve the conditions of those already most marginalised in society.

## Solutions with a narrow focus

Thus far, I have outlined the main problems with the concept of sustainable development as its failure to address specifically or in an intersectional manner the concerns of women and other marginalised groups; its focus on the market economy; and its obsession with science and technology as solutions. A common connection shared by all of these is a failure to address the interconnections and intersections between the problems sustainable development attempts to address. Narrow or single-focus solutions such as those offered by sustainable development prove to be problematic, as will be demonstrated in the next section.

Ecofeminists argue that the solutions such as sustainable development are too narrowly focussed and ignore the origins and complexities of the problems they seek to mend. In her writing about ecofeminist response to climate change, Gaard argues that environmental destruction and first world overconsumption are produced by masculinist ideology and will not be overcome through masculinist techno-science approaches like sustainable development. She also asserts that when climate change is most widely discussed as a scientific problem which requires scientific or technological solutions, the ideologies and economies of domination, exploitation, and colonialism are ignored (2015:24). The misrepresentation of root causes is a major part of the problem because it misdirects those who put effort into climate change solutions without adequate analysis (Gaard 2015). The Brundtland report's concept of sustainable development has resulted in the promotion of techno-solutions such as "the green economy", perpetuating capitalist and colonialist policies of privatisation, and failing to address any root causes of climate change (*ibid*).

Gaard argues that environmental degradation is rooted in military, industrial, and capitalist economics (2015). Similarly, Allison, who writes about climate change response from ethics of care framework, argues that the Western inheritances of moral and ethical reasoning are deeply entangled with the patriarchal and Eurocentric norms which actually led to climate change in the first place (2017). Since the Enlightenment, dominant threads of Western science and philosophy have understood humans as objective, autonomous rational actors. This has led to valuing of Eurocentric culturally "masculine" traits like independence, autonomy, hierarchy, domination, transcendence and an orientation to short-term results over traits coded as "feminine" such as interdependence, community, sharing, emotion, and care. (Allison 2017). Rather than seeing wellbeing as a whole, development discourse compartmentalises peoples' lives into 'economy', 'health' 'education' etc (Harcourt 1994).

Scientific responses to climate change are also linked with rhetoric which advocates for population control, anti-immigration, and increased militarism (Gaard 2015). Approximately 80 percent of the world's population (the global South) has contributed only 20 percent of global greenhouse gas emissions, therefore encouraging population control, or other "sustainable" food solutions as a main strategy is deeply flawed, because it fails to address the disturbing rate of overconsumption in the first world (Gaard 2015; Kings 2017; Malone 2015). The focus on the management of population as a solution to climate crises means women are blamed for climate crises which in reality affect women the most, both during climate disasters, and in the frequent rates of gender-based violence and material hardships that follow (Gaard 2015). Gaard contends that arguments made about overpopulation as a response to ecological crises function as "elitist rhetorical distraction from the more fundamental and intersecting problems of gender, sexuality, and interspecies justice" (2015:25). Instead, it should be made clear that "hunger is not a problem of overpopulation, but rather one of distribution, and elite control of the world's food supply" (Gaard, 2015: 27).

## Hunger is a structural problem

The consensus is clear: the problem of hunger is inherently structural and has evolved through centuries of marginalisation and oppression in order to generate control of wealth. As Schlottman and Sebo argue, while we may grow enough food for everyone, the problem is that it is not made available to everyone (2019). Therefore, the shift towards intensification promoted by the UN (under sustainable development) for both food security and environmental reasons seems stagnant when the real problem is the political and economic structures in place which mean food is not distributed justly (Schlottman and Sebo 2019). Insistence from the UN FAO and related organisations that food supply must be almost doubled through intensification to feed 10 billion people by 2050 seems ludicrous considering nearly one billion people across the globe today starve even though there is too much food (Holt-Giménez 2017; Schlottman & Sebo 2019). Striving to produce even more food to achieve goals of zero world hunger seems completely beside the point when we are already overproducing food. In fact, since food in the current system is treated as a commodity, increasing its production may even lead to more hunger. As Holt-Giménez notes, when farmers try to "farm their way out" of low prices, the result is even lower prices, which means that today farmers go broke over producing food in a world in which one in seven people are hungry (2017). As it stands, commodified food is distributed to those with political power and traded on a global market for prices unaffordable to many (Schlottman & Sebo 2019). (And food which is made affordable is more often than not extremely unhealthy and unethical, such as the lamb flaps traded to Pacific Island nations from Australasia). Increasing production will not allow us to "feed the world" because the world already produces enough food. The most effective way of obtaining the goal of zero hunger is through structural, political, social, and economic change (Schlottman & Sebo 2019).

The approaches to meeting food demand thus far have been neo-liberal and market-led, based on an assumption that food scarcity is the main problem, and relying heavily on the power of technology, innovation, and free trade, promoted by the belief that solving world hunger requires capitalism and free markets to boost industrialised agriculture, bringing with it the likes of genetic engineering, CAFOs, increased hormone use, synthetic biology, and other measurex (Holt-Giménez 2017). These approaches also tend to dismiss health and environmental concerns, under the assumption that 'bigger' or 'better' technologies or innovations will solve these issues (Holt-Giménez 2017).

Holt-Giménez argues that calls to "fix a broken system" are pointless, because the food system is unfixable: it never worked in the first place (2017). It has never worked well for people, the economy nor the environment; and is built on centuries of violence and destruction (Holt-Giménez 2017). According to Holt-Giménez, the food system is not broken but rather works exactly as a capitalist food system should and to recognise this would be the first step to making change (2017). Holt-Giménez argues that changing the food system would require a transformation of capitalism which in turn ironically requires transforming the food system (Holt-Giménez 2017). But neither of these transformations, in his view, can happen without an end to patriarchy, racism, and classism (Holt-Giménez 2017). To that list I would like to add speciesism, which, as was covered in the previous chapter, has played a crucial role in the development of the contemporary unjust capitalist food system. The next chapter develops this argument by asking why is the animal invisible in sustainable development discourse.

# Chapter six: where is the animal in sustainable development?

By failing to address the nonhuman animal, the UN's concept of sustainable development will not only fail to adequately address the problem of world hunger, but actually exacerbate it. In most sustainable development or environmental discourse, when the nonhuman animal is addressed it is usually in regard to farmed animals 'contributions' to climate change and environmental degradation (as if the individual animals themselves were to blame), or to management (i.e. how can we manage "livestock" in a way to decrease emissions). However, there is no consistent discussion about the ethics of the use of other species in sustainable development discourse (Kopnina 2014; Narayanan 2016). As the scale of nonhuman animals used for food continues to increase dramatically such discussion is urgently required (Kopnina 2014).

## Anthropocentrism in sustainable development

As previously mentioned, many of the flaws in sustainable development can be attributed to its fundamental androcentric view where "man" transcends "nature", and "nature" is simply a pool of resources to meet human and economic ends (Rochette 2002). As was argued in chapter four, this view is tied to western, patriarchal, colonial discourse, and also inextricably linked to human relationships with nonhuman animals. Sustainable development itself is undeniably based on the same view of the relationship between humans and "nature", as exemplified by Principle 1 of the *Rio Declaration* (27 principles to guide nations in sustainable development), which states "humans are at the centre of concerns for sustainable development" (in Rochette 2002: 167). The concept of sustainable development promotes the protection of the non-human world, but only to satisfy the needs of future generations of humans (Rochette 2002). Rochette argues that sustainable development should include the consideration of nonhuman species to ensure they will not become extinct as a result of exploitation or environmental degradation (2002); however, while this may be a fair argument regarding free living animals, she fails to recognise that the most exploited species on the planet are at no risk of becoming extinct.

## Nonhumans as commodities

As Narayanan argues, animal rights and liberation have been an "extraordinary blind-spot" in almost all conceptions of sustainable development (2016: 72). Whilst attempting to humanise development for marginalised groups of humans and maintain ecological integrity, sustainable development, she says, has continued to ignore and often intensify the commodification of nonhuman animals (2016). Animals have "fallen between the cracks of not quite human and not quite nature" and are thus objectified as 'resources' in capitalist economic systems (Narayanan 2016: 172). While sustainable development makes claims to protect "nature", nonhuman animals raised in industrialised settings are products of invasive and intensively manipulated reproductive interventions through modern animal husbandry practices, and therefore, because humans have complete control over fertility and reproduction (and life and death) nonhuman farmed animals are categorised as an infinite supply of "resources" (Narayanan 2016). Thus, sustainable development as a concept includes no need to protect them. As a consequence, sustainable development, with its growth-driven focus, has become "rife with violence for nonhumans" who are perceived as 'resources' or 'consumables' for exploitation (Narayanan 2016: 172).

In 2015, for the first time, a specific plea for animal welfare in sustainable development was made by WSPA (World Society for the Protection of Animals). The associated report argued that animal welfare must be considered as an essential element to sustainable development because "helping animals helps people" - that is, one billion of the world's poorest people rely on nonhuman animals for income and food security, and therefore integrating animal welfare into resilience planning is vital (WSPA 2015). However, as Narayanan points out, conceptions of sustainability that link animal welfare to their utility to humans leads to questions about whether sustainable development can genuinely deliver animal welfare when it unambiguously prioritizes human-centred development and is focussed on maximising efficiency so that neither the environment nor economic development is compromised (2016). Sustainable development is inspired by eco-efficiency, which continues to prioritise economic growth, meaning the value of animals is always extrinsic, and their rights and wellbeing will always be overlooked (*ibid*). For example, the FAO (Food and Agriculture Organisation of the United Nations) is solely concerned with human health and welfare, so standards for "efficient" transport of "livestock" are prioritised over suitable or even humane transportation, which leads to overcrowding of nonhuman animals over long distances (Narayanan 2016). It also leads to the fundamental exploitation of their bodies in a system which sees them as resource.

## Exploitation of bodies/reproductive justice

The reason the lives of nonhuman animals are seldom considered in sustainable development discourse is, then, largely due to speciesist norms which define animals as property, just as norms once defined wives or slaves as property (Kemmerer 2011). Nonhuman animals are readily exploited because they are objectified. Objectification allows subjects to be turned into objects for use. To return to Adams' "A" and "not A" categories, those in the "A" category objectify those in the "not A" category. For example, women are viewed as objects for sex, household labour, or status symbols; racists view other races as slaves, cheap labour, or athletes; and speciesists view animals as objects for food, pets, and entertainment (Adams 2003). Objects do not speak, have no needs, and only exist to serve others (Kemmerer 2011).

Objectification and exploitation occur across species lines and intersect with one another. Many feminist animal scholars focus on intersections between the oppression of women and the oppression of nonhuman animals, which is relevant when discussing sustainable development because as a concept, sustainable development seeks to improve the conditions of the most marginalised within communities, particularly women (in theory). The consumption of nonhuman animals is undeniably a feminist issue, because it involves using someone else's body for one's enjoyment, without their consent (Adams 1999; Adams 2003; jones 2011). Further, both women and nonhuman animals are exploited for their reproductive capacities, and, at least from a western patriarchal perspective, both are devalued as they age and are no longer able to reproduce (Kemmerer 2011). Kheel argues that just as marriage once granted a man legal rights to his wife's sexual and reproductive services, animal husbandry grants agribusinesses access to the bodies and reproductive services of nonhuman animals (1999 in Kemmerer 2011). In fact, the word 'husband' actually has its roots in "livestock" ownership (Meyer 2015). From "dairy" cows to "layer" hens, and "breeding" sows, animal agriculture worldwide relies on what jones calls the "sexual and perversely sexualised exploitation of female farmed animals" (2011: 53). [8]

[8] Although it is important not to invisiblise the lives of male nonhumans in the food industry, particularly infants regarded as waste products (largely because they lack reproductive abilities) – i.e. "bobby calves"; male chicks in the egg industry; and "breeder" roosters and bulls

As Adams and Gaard point out, western, industrialised systems of animal production rely explicitly on the objectification and exploitation of the female body (and subsequently harm the health of both nonhuman and human females who consume their bodies and reproductive products) (2003; 2015). The control of female fertility for food production uses invasive technologies to manipulate female bodies across species (Adams 2003). Sustainable development discourse has in the past been criticised by ecofeminists for its focus on reducing the human population, shifting the blame on women – dubbed "population polluters" - rather than focussing on issues of power and distribution, and the small group of elites who contribute the most to environmental degradation (Gaard 2015; Kings 2017; Malone 2015). Extending this further, then, is a need to consider the role of animals exploitation, particularly of female nonhumans' exploited reproductive capacities. Gaard argues that climate justice ought to oppose the commodification and control of both nonhuman animal bodies and female bodies across species lines. She argues that industrialised food production is a problem of species justice, environmental justice, reproductive justice, and food justice (27); and links the exploitation of sexuality and reproduction across species as a feature of a colonialist and techno-science worldview (2015). Combatting this exploitation will prove difficult under current conceptions of sustainability, which, as has been detailed previously, rely on increased production/productivity, intensification, and biological manipulation of the already exploited nonhuman.

Sustainable development promises to improve the lives of the marginalised living in "developing" countries, with a special focus on women, yet promotes exploitative and oppressive practices on some of the most marginalised beings in the world. Exploitation of bodies for their productive or reproductive capacities promotes the same ideologies which created the power structures in place that cause world hunger. Is it really "sustainable" to continue to objectify and enforce suffering on nonhuman animals through intensive animal agriculture practices? Sustainable development's ongoing encouragement to "put the cows in a shed" is not only ignorant to intersections of oppression and exploitation on sexist, racist, colonialist lines; but it fails to take an empathetic approach in favour of rational, techno-scientific, western-patriarchal, and growth-driven solutions.

Kemmerer argues that it is through ideologies and institutions that oppression is proliferated, and through these individuals are socialised to oppress particular 'others'. Differing forms of oppression are linked through common ideologies, institutions, and socialisation making oppressions "normative and invisible" (Kemmerer 2011). Because contemporary societies are patriarchal, contemporary oppressions stem from patriarchal ideologies and institutions (Kemmerer 2011). Throughout history, women, children, and nonhuman animals have all been the legal property of males and thought to exist to serve the needs/desires of others (Kemmerer 2011). Kemmerer argues that both patriarchy (male control over women) and pastoralism (male control over nonhuman animals) "are justified and perpetuated by the same ideologies and practices" (2011: 16). For example, and as was outlined in chapter four, women and nonhuman animals have throughout history been classed as less intelligent, less rational, and more primitive (therefore closer to nature) than white "civilised" men (Kemmerer 2011). This has allowed for the exploitation of women and nonhuman animals alike (Kemmerer 2011).

## What does this have to do with ending world hunger?

## Animal agriculture contributes to global hunger through its degradation of environment and marginalised groups

As was extensively covered in part one of my thesis, the use of nonhuman animals in the global food system has extremely detrimental effects on the environment, marginalised groups of humans, and the billions of nonhuman animals it exploits. Animal agriculture contributes to global hunger because it uses disproportionate amounts of land and other natural resources where plant-based foods for humans could be grown. Intensive methods of "livestock" farming also degrade natural resources making it difficult to cultivate subsistence crops, exacerbating problems for the most marginalised communities across the globe. Likewise, "livestock" agriculture contributes more to climate change than any other sector, the effects from which worsen conditions for the most vulnerable people, including women in agricultural communities who face increased work burdens in times of climate disasters such as droughts (Allison 2017; Gaard 2015; Rochette 2002). A food system which normalises and even promotes the consumption of nonhuman animals is also an assault on human health, directly corelated with levels of obesity, heart disease, diabetes, and various types of cancer; while at the same time causing hunger for those in developing countries where cash crops are grown and exported for "livestock" feed instead of food to sustain the population. The UNEP (United Nations Environmental Panel) calculates that at least 3.5 billion humans (nearly half the current population) could be fed a healthy diet if land currently used in animal agriculture was transformed to plant-based farming (Narayanan 2016). The use of nonhuman animals for food leads to steep calorific loss and escalates hunger for the poorest humans as agricultural land is used to cultivate plant food for "livestock" (Narayanan 2016).

## Global food system represents war-like and exploitative relationship with animals

Our relationship with other animals within the food system is undeniably exploitative, and war-like, to borrow from Wadiwel (2015). The way nonhuman animals are granted very little consideration reflects and perpetuates other violent power structures such as racism, sexism, and classism, all of which are connected to global hunger. In fact, as was described in chapter four, ideologies such as sexism, racism, and classism, as well as capitalism, evolved side by side with speciesism. Throughout my dissertation, one recurring argument states that world hunger is caused by unequal distribution and power structures which enable the elite to control the world's food supply (Gaard 2015). I would like to expand on this to argue that the very power structures which cause world hunger, are inextricably linked to the same power structures under which nonhuman animals are dominated and exploited within the global food system. Because my thesis uses ecofeminism as its main framework, I will be focusing mainly on oppression under patriarchy, and particularly intersections with the conditions of women, who are statistically the hungriest people in the world (Gaard 2015).

As has been discussed, the current global food system is capitalist in structure, meaning food is treated as a marketable commodity. This capitalist structure is also inextricably linked with sexism, racism, and speciesism. Capitalism exacerbates suffering for nonhuman animals within the food system as the search for maximised profit and minimal input worsens living conditions, shortens lifespans, and increases suffering and traumatic deaths, all of which I have covered in this thesis. Capitalism also ignores the traditional work of women. Many argue that capitalism is the product of ideologies which supress the "other"; women, nonhuman animals, and marginalised groups of humans.

Women produce the majority of the world's food, yet the majority of the world's hungry are women and children, not men (Gaard 2015). In ecological crises, if there is not enough food, women will

often go without so that men and children may eat (Adams 1999; Gaard 2015). Gaard argues that while across the globe, women are primarily responsible for cooking and serving food, men eat first, and consume the most nutritious foods, leaving children to eat afterwards and women to eat last (2015; Adams 1999). If food is insufficient, women often deny themselves food to enable children to eat (Gaard 2015). An estimated 146 million children in 'developing' countries are underweight due to malnutrition, and 60 percent of those suffering from hunger globally are women (Gaard 2015). Women also work two thirds of the world's working hours, produce half the world's food, yet earn 10 percent of the world's income (Gaard 2015). They also make up seventy percent of the world's one billion poorest people (*ibid*). Gaard argues that if there was actually a correlation between hard work and income, women would be the highest earners in the world (2015). While sustainable development goal number two (zero world hunger) does recognise this to some extent, it fails to address the root cause of this unequal hunger. Under sustainable development goal number two the United Nations claims that if women farmers had the same access to resources as their male counterparts, the number of hungry people in the world could be reduced by up to 150 million (UN 2019d). However, what do such resources entail? The UN's main solution to improving food security involves investment in techno-science solutions to increase productivity in farmed nonhuman animals, as well as promoting intensive industrial practices (*ibid*, Sims et al 2018). This means that the UN seeks to decrease hunger rates in women by increasing access so that theoretically, women, too, can exploit sentient nonhumans, rather than addressing the reasons why women are amongst the hungriest in the world (which, as I argue, has everything to do with the exploitation of nonhuman animals).

Promotion of "sustainable intensification" has been referred to as a form of greenwashing "livestock", flying in the face of considerable research on the detrimental environmental effects of "livestock" farming. Scholars like Twine argue that capitalism plays a large part in the continuation of nonhuman animal farming (2013). Animal products are promoted by governments as necessary for health and wellbeing, despite evidence to the contrary, in large part because of the commodification of "food" and heavy lobbying by powerful industries. In fact, Twine argues that the so-called ""livestock" revolution" - a response to the supposed projected demand in animal products is a capitalisation move by global "livestock" corporations (2013). UN-funded reports claim that human consumption of nonhuman animals will double by 2050, however, this is based on an assumption that the hegemonic human eats "meat", as Twine argues (2013). In fact, this assumption almost mirrors colonialist discourse in which it was assumed that to be successful or dominant one must consume a lot of "meat". The assumption that population growth inevitably means increased consumption of animal products naturalises the ""livestock" revolution", pushed by large corporations seeking to capitalise on nonhuman animals by attempting to normalise a wide range of identities, relations, and practices through dietary change (Twine 2013). A productivist ""livestock" revolution", Twine argues, claims to protect the environment through increases in efficiency in nonhuman animal farming, rather than through any meaningful changes to consumption levels, because these could threaten pre-existing markets: this is clearly demonstrated by sustainable development goal 2. Such attempts include manipulating genetics in animal breeding, as well as measures to capitalise on the waste products of animal production, like schemes to generate energy from beef processing waste (Twine 2013). Twine argues that genomics and biotechnology have been fetishized by scientists and policymakers as the means by which capitalism can be reinvented as a more efficient and environmentally harmless scheme operating under the umbrella of 'knowledge-based economy' (2013).

The idea that we can do as we please with nonhuman animals, to the point where those promoting justice for the environment and for marginalised human communities promote practices such as

"sustainable intensification" which will exacerbate suffering for billions not only mirrors ideologies towards marginalised groups of humans, which caused hunger in the first place, but they also demonstrate a complete lack of caring and empathy. This begs the question: could it be that people in the world go hungry not because we don't know how to produce enough food for a growing population, but rather because we don't care? Gaard argues that when we eat high up the food chain – i.e. consume nonhuman animals or their reproductive products, we are "tilting the planet's plate of food into the mouths of the world's most affluent" to the detriment of the 870 million people, almost half of whom are children under the age of five, who suffer from chronic malnourishment (2015:27). Advocating for sustainable intensification or genome sequencing in nonhuman animals is no substitute, as Gaard argues, for "reproductive justice, interspecies justice, gender justice, and climate justice" (*ibid*).

# Solutions/alternatives

## Ethic of care/empathy/compassion as an alternative (what is it?):

Sustainable development, through goal number two to end world hunger, proposes to solve the problem of world hunger largely through techno-science solutions like increasing production, and by prioritising economic growth. However, if the problem of world hunger is in fact rooted in greed of elites, and the normalisation of oppression and exploitation, then I theorise that a more holistic approach which recognises this and encourages feelings of compassion and empathy would be more effective in ending the suffering brought about by the current food system. For this, I propose the application of feminist care ethics, which, as Allison describes, enable individuals to recognise the importance and relevance of caring relationships and subjective feelings such as compassion, love, and empathy (2017). As Allison and other ecofeminists argue, the individual cannot exist separately from the countless relationships and communities which together produce, shape, and bind the individual (2017). Relatedness and interconnections are not only fundamental to being human (which I'll get to shortly), but to all living beings (Allison 2017).

In terms of sustainable development, prioritising an ethic of care may be more useful because it recognises diverse sources of knowledge, rather than promoting one over all others (like the elevation of episteme in development discourse), and enables a way in which we could listen more closely to those whose environments are dramatically changing in the context of climate change, as Allison argues (2017). Kheel argued that traditional ethics debates utilise a binary in which there is a victim and a hero thus obscuring the possibility that the hero might actually be part of the greater problem (Gruen 2015). We can see this clearly in sustainable development discourse where the "hero" may be development, the "victim" being members of marginalised communities in "developing" countries. Gruen argues that alternative empathetic approaches to these ethical debates may enable us to ask questions about the bigger picture, so in the case of sustainable development goal number two, rather than trying to help the "victims" of world hunger; it might be more helpful to ask why people go hungry in the first place, and endeavour to understand the root causes, which include interlocking oppressions.

An ecofeminist ethic of care approach recognises that all forms of oppression are interconnected (because violence is central to patriarchy), and therefore acknowledging similarities between oppressions is essential to finding solutions (Kemmerer 2011). For example, as Kemmerer notes,

environmentalists in the US could more effectively fight against the dumping of toxic waste in predominantly poorer, non-white neighbourhoods if they addressed racism (2011).

Recognising the importance of caring relationships is central to protecting environmental interests, because, as Kheel points out, having care (as in, to be 'careful') means to pay attention to one's surroundings, in direct contrast to being 'careless' (2008). For many ecofeminist animal studies scholars, ethics of care is fundamental to animal ethics (Kemmerer 2011). Deckha argues that it is essential to apply an ethic of care to nonhuman animals, and that emotionally compassionate responses to animal suffering should be legitimised as appropriate in ethical judgements (2012).

## Empathy

One form of caring perception which is prominent in the field of ecofeminist animal ethics is Lori Gruen's concept of *Entangled Empathy*. Entangled empathy involves a blend of cognition and emotion (rather than the separation of these, characteristic in patriarchal thinking) through which we can recognise that we are in relationships with others, and that we are responsible through these relationships for attending to others' needs, hopes, interests, desires, vulnerabilities, and sensitivities (Gruen 2015). Although, unfortunately, ethics of care has become associated with "feminine" traits, establishing stereotypical gender roles, entangled empathy rejects traditional binaries, instead considering wider contexts and relationships in regard to ethics (Gruen 2015). Gruen asserts that justice and care should not be at odds with one another, and likewise neither should reason and emotion (2015). Entangled empathy provides a theory which bridges perceived gaps between both reason and emotion, and self and other, by recognising the ways in which these work to reinforce each other (Gruen 2015). In the context of interspecies food justice, for example, Curtin points out that an ethical food practice requires both "practical reason" (e.g. weighing up the facts and figures about the consumption of nonhuman animals) and compassion; the ability to empathise with the victims of the current food system (2014).

Entangled empathy also enables us to bridge the gap between theory and experience. For example, arguments such as Peter Singer's dominant animal rights argument (outlined in the introduction) do not fully consider the experiences of individuals suffering under mass exploitation, but rather groups them together – i.e. all 70 billion or so nonhuman animals suffering within the food system (Gruen 2015). Gruen argues, however, that it is often the richness of individuals' experiences and relationships which help us to understand what makes life meaningful to them, and therefore what is lost or gained if we fail to act (2015). This means it might be easier for us to empathise with the suffering of farmed animals if we, for example, considered the experiences of an individual cow, rather than the generic experiences she shares with the hundreds of others living in the same shed.

Curtin argues that the capacity to share meaningful experience empathetically with others is fundamental to, and possibly the defining feature of being human (2014). From an evolutionary perspective, our capacity to relate to others, or our empathy, has allowed our species to become an amazing success (*ibid*). Humans are social beings with mirror neurons, which were identified in the f5 part of the brain by scientists in the 1990s (Curtin 2014). These mirror neurons allow for quick empathetic reactions, such as yawning when we see someone else doing the same (Curtin 2014). Empathy may be the defining characteristic of 'being human', but it is in no way unique to humans. Mirror neurons also explain how groups of nonhuman animals like flocks of birds or schools of fish can coordinate their behaviour with speed and accuracy (*ibid*). In fact, mirror neurons are known to exist in nonhuman primates, birds, and possibly octopi (Curtin 2014). This, as Curtin argues,

demonstrates how being human is a matter of degree rather than kind (2014). If we take empathy as fundamental, then it is easy to recognise our interconnectedness to other living beings, in stark contrast to the classic ways of defining humanness which attempted to define humans' transcendence from the rest of "nature", as exemplified by Aristotle's "rational animal" or Descartes "thinking thing" (Curtin 2014).

## How are care ethics meaningful for ending world hunger?

### Abolishing the hierarchy of care

Feminist care ethics and concepts like entangled empathy are meaningful in terms of ending oppression under the current food system, for both those with limited access to food and resources, and for the countless nonhuman beings regarded as "food". While many may show empathy or compassion for human suffering, "our understanding and empathy seem to halt at the species boundary" according to Gaard (2011:26). Ethics of care concepts encourage us to recognise interconnectedness between all living beings, and to abolish hierarchies of care – i.e. who is deserving or undeserving of being cared for (Adams 2007). The concept of entangled empathy also promotes the recognition that humans are already in relationships with other animals – most of these being oppressive and exploitative (Gruen 2015). For the sake of the wellbeing of all, Gruen argues that we need to radically rethink these relationships (2015). Keith Thomas (1983) and Jim Mason (1997) argue that all forms of oppression can be traced to the treatment of nonhuman animals by humans (in Adams 2007). For example, A. Breeze Harper links racism, racialisation, and whiteness to the treatment and attitudes towards nonhuman animals (2011). Other examples have been illustrated throughout the first two sections of my thesis such as the connections between colonialism and speciesism, or the objectification of both women and nonhuman animals through consumption. Ecofeminist ethics of care concepts acknowledge that all forms of oppression are interrelated, and that no part of the world, human or nonhuman, exists for the use of pleasure of any other part (Dunham 2010; Harper 2010; Kemmerer 2011).

Hierarchies of power are the root causes of some of the main problems brought about by the current food system, such as why food is not distributed justly, or why those in privileged positions do the most environmental damage. Allison points out that those people who have done the least to alter the climate are experiencing the greatest threats in their ways of life (such as those who live in small island states, or high mountain regions) (2017). Thus, she reasons, a feminist care ethic of climate change would recognise the interconnected and indivisible nature of justice: and the fact that it is not possible to have justice for one without justice for all (Allison 2017). Instead of the techno-scientific solutions that sustainable development currently promotes, climate change could be responded to through recognition of our relational caring obligations (Allison 2017).

### Compassion and political realm: creating change requires care

In the last chapter I came to the conclusion that world hunger may exist simply because most people do not care enough, which is the same reason that countless nonhuman animals are exploited and abused in the global food system. But how do we get people to care about starving children, or broiler chicks whose legs snap under their own weight; or both? At the beginning of this thesis I mentioned that I had included humans in my research question partially because I wanted to legitimise my topic, although I have since unsubscribed from this "hierarchy of caring" (to borrow from Adams 2007). Adams argues that if we ask how we can get people to care about nonhuman

animals when they do not care about human beings then we accept a "hierarchy of caring" which assumes that people first have to care about other human beings before they care about nonhuman beings, and that these caring acts are mutually exclusive (2007). In reality, as she argues, violence or oppression against humans and nonhumans is interdependent, and so caring about both is essential (Adams 2007). Adams argues that assuming that one cannot respond to animal suffering until human suffering is eliminated not only reinforces the species barrier, but places a boundary on compassion, and assumes there is only limited compassion/empathy to go around (2007). Unfortunately, this way of thinking may actually aide in the construction of a world where human suffering becomes normalised, because it perpetuates the idea that what happens to nonhuman animals is completely unrelated to what happens to humans, whilst promoting a myth about how caring works (*ibid*).

These arguments also separate caring into dualisms such as "deserving/undeserving" or "now/later" or "first us, then them" which, as Adams argues, constitutes a "politics of the dismissive" (2007:23). Adams argues that genocide (the focus of her chapter) benefits from the politics of the dismissive, and I would add that world hunger must also be a product of such dismissal, since it is clear that the problem of hunger in the world has very little do to with how much food we produce, no matter how hard sustainable development pushes for increased productivity or investment in techno-science solutions or "sustainable intensification".

Adams argues that another reason people do not care is because feelings themselves have become objectified and placed outside the political realm (2007). Submission to authority requires and encourages this objectification (Adams 2007). She argues that we have been socialised to believe that feelings do not matter, so much that even the awareness of feelings is eroded within this state of mind (*ibid*). Consequently, Adams theorises that people have become too afraid to care, because it requires courage to break from "normalising ideological screen" which dictates, "it's okay if it's an x, but not a y" (2007: 33). By normalising the violence of "meat" consumption, and transforming nonhuman subjects into objects, humans have become socialised to not caring about nonhuman animals (Adams 2007). This 'war on compassion' as Adams terms it, has resulted in a desire to move away from feelings, particularly uncomfortable ones. It has also caused many people to think that it's pointless to care – unable to see how their caring will change anything, and such apathy is reinforced through current political situations as well as in the media (Adams 2007).

The war on compassion has led us to believe that we should help humans first, however, as long as we treat nonhuman animals as lesser beings, and as long as we subscribe to the category "animals", both the treatment and the concept will legitimise the treatment of humans like 'animals' (Adams 2007). Adams argues that by bringing compassion for other animals to the forefront, animal advocates have begun the process of overcoming divisions not only between humans and nonhuman animals, but between compassion and the political realm (2007). Perhaps if we let compassion and empathy back into the political realm then we could begin to eradicate the overwhelming suffering experienced by humans and nonhumans within the food system.

## Ethics of care is broader than abstract "rights"/rejects masculine themes

The "war on compassion" exists in large part because, as many ecofeminists identify, subjective feelings are heavily devalued in patriarchal societies, whereas objective reason and logic, on the other side of the dualism, are masculine-coded traits and regarded in such high esteem in dominant Western culture that some describe it as fetishizing (Allison 2017). Debates within Western philosophy against compassion, and in favour of objective reason, project a clear divide between

reason and emotion, where reason is objective, dispassionate, and universal, whereas emotion is "subjective, flighty, and dangerous to self and others" (Curtin 2014: 42).

Both dominant animal rights and sustainable development discourses share this fetishizing of objectivity over compassion or empathy. Concepts such as feminist care ethics, or Gruen's *entangled empathy* are critical of logic-based arguments and seek broader ways of considering ethical judgements. For example, Gruen argues that dominant animal rights arguments seeking to end "animal suffering" are too general and broad and put a blanket cover over all species of nonhuman animals, risking essentialising all other animals into one category of "nonhuman" (Gruen 2015). She argues that traditional animal rights discourse often fails to take into consideration the individual needs of specific species, and risks failing to recognise individuals as individuals (Gruen 2015).

Likewise, in environmentalism, Kheel argues that the dominant approach to conservation reflects masculinist orientation which fails to take into account care or empathy for individual nonhuman beings (2008). The same could be said for the sustainable development model, which may have laudable goals such as ending world hunger whilst protecting the environment but does not necessarily listen to the particular interests or desires of individuals. In this way, I believe sustainable development rhetoric shares similarities with dominant animal rights discourse. Both may have good intentions, but their narrow focusses and lack of empathy or compassion in favour of masculine-coded traits like science and reason make them blind to alternatives. Just like dominant animal rights discourse fails to address the realities of nonhuman animals suffering at the hands of humans, Rochette argues that sustainable development has failed to address the realities of the most marginalised people (women) living in climate crises (2002).

Ecofeminists identify dualistic thinking as a primary factor foundational to oppression, resulting in distorted relationships with the earth and other animals (Adams & Gruen 2014). By challenging the reason/emotion binary, the feminist care tradition, on the other hand, focuses on affective connections such as compassion and empathy, demonstrating that these too have a cognitive or rational component (Adams & Gruen 2014). The two are not mutually exclusive, for example deliberative and epistemic capacities help to channel our empathy and compassion, as Adams and Gruen point out (2014). jones argues that Eurocentric philosophy advocates for transcendence of our animal bodies through our minds, and that this divide between mind and body uses the same logic which divides the world into male/female; white/black etc (2014). She argues that suppression of "eros"/our bodies/desires subdues feelings and relationships, without which liberation would be impossible (because we are cut off from ourselves and others) (jones 2014). In contrast to political liberalism, where the detached and prominently individuated self is the owner of individual rights, the politics of compassion suggest a mind-body thoroughly engaged in a social world from the start (Curtin 2014). The discovery of mirror neurons in the f5 part of the brain confirmed that "our moral lives do not start in solitary" (Curtin 2014 p). Therefore, while some (like Cartesians) believe that inner space later becomes social; empathy, arguably a defining feature of being human; is constituted by its sociability - as Curtin argues; "our social selves are basic" (2014:54).

An ethics of care approach is also less anthropocentric because it does not rely on the assumption that ethics should be based on a feature that is uniquely human: human reason (Curtin 2014). As opposed to moral extensionism, the compassion approach starts from a common source, since we are far from alone in our capacity to experience empathy (some species possess kinds of empathy which seem more advanced than ours, for example the shapes of flocks of birds in flight) (Curtin 2014). An empathetic or compassionate approach begins with recognition of shared physical and social worlds and develops through understanding of the interconnectedness of self and others

(Curtin 2014). As Curtin describes, this approach is not just directed at one group, but toward all beings who share the social world (2014).

Applying an empathetic, ethics of care approach to food justice will not only allow us to expand our compassion and empathy to recognise the suffering of nonhuman animals, but also to care, and thus engage with the world around us. In his book *Love Notes* Philip McKibbin calls for a "politics of love", a concept he and his counterpart Max Harris first sketched in 2015, which proposes a values-based politics, extending our circle of concern beyond ourselves, to all humans, nonhuman animals, and the environment (2019). McKibbin argues that a loving politics requires care; and that when we care we feel, and when we feel we think (2019). Thus a loving politics is both "deeply critical and genuinely constructive" (McKibbin 2019:ix). A politics in which love is at the centre also drives urgent and radical change (McKibbin 2019). Gruen makes a similar argument in her work on the concept of entangled empathy; that the recognition of affective states of other beings will lead to awareness and motivate action to eliminate suffering (2015). If actions taken to end world hunger were motivated purely by love, rather than any capitalist intention to expand and 'develop' the economy, perhaps we would be closer to that goal. If the collective muscle of empathy was engaged, through a loving politics, maybe we would be more attentive to both the suffering of the billions of nonhuman animals currently in the food system, but also to the deep societal wounds caused by the power structures which keep such as system in place.

Some may say that these ideas about obtaining food justice through an ethics of care in which the consideration of nonhuman animals is central, is too idealistic, utopian, or unrealistic. In his work on the politics of love, McKibbin addresses similar criticisms. In response to criticism that the politics of love is 'too idealistic', McKibbin argues that "in the messy world of politics, we need motivating ideals to keep us focused on what is important to us" (xvii). Such ideals could drive us in the direction of abolishing power structures in place which uphold oppression faced by so many in the food system. Some also claim that these ideals are 'too unrealistic', and that all humans are inherently greedy, and selfish; however, McKibbin disagrees with such a cynical view of human nature, arguing that the reason for habitual selfishness is in reality most likely attributed to fact that we teach each other that it is a natural part of being human (2019).

Further, many may argue that due to the (supposed) unrealistic nature of such ideals, it would be better to set more "achievable" goals or lower the standards (McKibbin 2019). Since incremental change is more achievable, so the argument goes, we should make that the focus, rather than radical change (*ibid*). This sort of argument plays out regularly in food justice/sustainability discourse, often taking the form of "it's unrealistic to expect the world to go veg*n; what if we just ate *less* beef" etc. In response to this, McKibbin cites Niki Harré, who introduces the importance of positive narratives; that is, that rather than focusing on the negative consequences of inaction (which discourages positive behaviours because it makes people feel doomed), if the focus rests on what we can do; or what people are already doing; it is more hopeful, constructive, and encouraging because it gives promise to our actions (2019).

There are many people and movements working to create positive change in the realm of food justice, loving politics, sustainability, and animal rights (and the intersections of these). Radical change is unlikely to come from large governments, multinational organisations, or the 'invisible hand' of the market; but rather (to borrow from Kirsty Dunn) from the "flax roots". For example, McKibbin argues that reimagining justice for nonhuman animals will likely be led by indigenous peoples, because indigenous people not only have concepts of love which differ from hegemonic western conceptions and extend beyond people to nonhuman animals and the land (such as the Māori concept *aroha*); but are also sensitive to issues of power, being well-acquainted with

oppression, with ways to resist it, and with knowledge of the ways in which different oppressions are connected (2019c). In *Kaimangatanga* Dunn elaborates on the many current Māori-led community, hapū, whānau, and marae-based initiatives, networks, and projects which seek to educate, revitalise food practices, gather and share knowledge, and ultimately decolonise through plant-based food (2019). While it shares many similarities, *Kaimangatanga*, the abstaining of the use of nonhuman animals, does not equate to veganism: it stands it in own right as a Māori way of knowing and relating to the world through tikanga such as manaakitanga (hospitality; caring values) and kaitiakitanga (stewardship; sustainability) (Dunn 2019).

Likewise, in her work *Sistah Vegan*, Harper encourages Black-identifying women to see the intersections between the oppression and suffering of food workers, nonhuman animals, and the environment in the food system, and the oppression of African American people (women in particular), stemming from centuries of systemic racism and slavery (2010). Harper argues that the consumption of unethical food such as what she terms "flesh foods", and how that consumption is then rationalised, stems from the same oppressor/oppressed relationships or hierarchy of superiority which led to Nazi Holocaust, Native American Genocide, and African slavery (2010). Harper supports grass roots movements to decolonise from colonial diets for the health of poor, Black, and brown communities, for the health of the planet, and for the recognition of intersecting sufferings, including the suffering of nonhuman animals (2010).

Giacomoni et al argue that amidst all the destruction, oppression, and exploitation at the hands of neoliberal capitalist ideologies, radical change is being driven by (mostly) women and indigenous peoples, motivated by ecofeminist ethics of care (2018).

*"We see shared control being built through direct actions to stop capitalist destruction; defend and build community-controlled food and renewable energy production and exchange; and extend command over the shared life-ground on which all people and other beings depend"* (Giacomoni et al 2018: 5).

And while the world may seem uncaring and unloving, there is some hope for a future in which empathy, or love ethics are applied within governance, for example as McKibbin points out, the current government of Aotearoa under Jacinda Ardern promised to be "focused, empathetic, and strong" (xvi). This does not necessarily mean radical change for the rights of nonhuman animals or the environment, but at least presents a glimmer of hope for a more loving and empathetic future.

As I write this, the Amazon rainforest, dubbed the "lungs of the planet" is burning, and has been for the last nine months at least. It is burning for the sake of "development" – to generate income through clearing of space for cow grazing, or monocrops such as soy (the majority of which will be fed to farmed animals). Under current dominant conceptions of sustainability, many might argue that the solution to the burning rainforest would be to intensify agriculture to necessitate less land cleared for grazing; i.e. "put the cows in sheds" instead. Perhaps these cows could be specifically bred to emit less methane, after years of experimentation on other cows (and maybe they could also be fitted with hats and jackets which grow grass and produce some of their feed). And if animal agriculture like this was intensified across the globe, perhaps enough "meat" could be produced to feed a hungry world, all whilst maintaining 'healthy' economic growth.

But even if these solutions actually worked, and somehow we had a food system which had little impact on the environment and fed the world's hungry with animal products, I would argue that such alternatives would be meaningless if they failed to include empathy for the nonhuman animals

involved. When I argue for moral veganism (in the western world at least) and its benefit for humanity I'm not only referring to the environmental impact of the consumption of nonhuman animals for food, or the inefficiency in the ways in which land is used in "livestock" agriculture which lead to hunger for the world's poorest; I am also concerned with its links to centuries of oppression of humans and other animals across the globe. Ending world hunger 'sustainably' isn't about improving production or genome sequencing cows so they produce less methane, it's about injecting some empathy into the situation and thus engaging embodied empathetic awareness to acknowledge the power structures in place which create hunger for humans and violence and exploitation of nonhuman others.

A feminist ethics of care framework may be more helpful in terms of inclusiveness, because, unlike the facts, statistics, and graphs which depict animal agriculture's devastating effects on the environment and other social justice issues, it draws on important interconnections and relationships between and within human and nonhuman groups, whilst utilising subjective feelings of compassion, love, and empathy. Gaard argues, "authentic food justice cannot be practised while simultaneously excluding those who count as 'food'" (2015: 27), and likewise I theorise that sustainable development goal number two – ending world hunger – will not be achieved without a more holistic approach which includes the consideration of nonhuman animals. We cannot "feed the world" without abolishing existing power structures, and a good place to start is with those which continue to oppress nonhuman farmed animals recognised as exploitable resources.

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